BRENGUIER, JEAN-LOUIS; CHAUMAT, LAURE; Droplet Spectra Broadening in Cumulus Clouds. Part I: Broadening in Adiabatic Cores, 628–641
BRENGUIER, JEAN-LOUIS ; see CHAUMAT, LAURE; 642–654
BRETHERTON, CHRISTOPHER S.; see CARR, MATTHEW T.; 1673–1693
BROGNIEZ, GERARD; see AURIOL, FREDERIQUE; 3376–3390
BROWN, ANDREW R.; see STEVENS, BJORN; 1870–1891
BROWNING, G. L.; see THOMAS, S. J.; 3053–3063
BUIZZA, ROBERTO; see GILMOUR, ISLA; 3525–3539
BURIEZ, JEAN-CLAUDE; DOUTRIAUX-BOUCHER, MARIE; PAROL, FRÉDÉRIC; LOEB, NORMAN G.; Angular Variability of the Liquid Water Cloud Optical Thickness Retrieved from ADEOS–POLDER, 3007–3018
BUSINGER, JOOST A.; see KORA IN, DARKO ; 1714–1731
BUSINGER, JOOST A.; see BUSINGER, STEVEN; 3793–3796
BUSINGER, STEVEN; BUSINGER, JOOST A.; *Viscous Dissipation of Turbulence Kinetic Energy in Storms, 3793–3796
BUTCHART, N.; see JACKSON, D. R.; 2000–2008
CALLAGHAN, PATRICK F.; see SALBY, MURRY L.; 1858–1869
CAMPBELL, JAMES R.; see SASSEN, KENNETH; 481–496
CANE, MARK A.; see CHIANG, JOHN C. H.; 1371–1394
CANUTO, V. M.; CHENG, Y.; HOWARD, A.; New Third-Order Moments for the Convective Boundary Layer, 1169–1172
CARR, MATTHEW T.; BRETHERTON, CHRISTOPHER S.; Convective Momentum Transport over the Tropical Pacific: Budget Estimates, 1673–1693
CARSWELL, ALLAN I.; see DUCK, THOMAS J.; 3581–3596
CAYA, ALAIN; see PROTAT, ALAIN; 1222–1248
CHAGNON, JEFFREY M.; BANNON, PETER R.; Hydrostatic and Geostrophic Adjustment in a Compressible Atmosphere: Initial Response and Final Equilibrium to an Instantaneous Localized Heating, 3776–3792
CHAI, TIANFENG; see LIN, CHING-LONG; 1767–1783
CHAN, JOHNNY C. L.; DUAN, YIHONG; SHAY, LYNN K.; Tropical Cyclone Intensity Change from a Simple Ocean–Atmosphere Coupled Model, 154–172
CHANG, C.-P.; see KUO, HUNG-CHI; 1035–1050
CHANG, EDMUND K. M.; The Structure of Baroclinic Wave Packets, 1694–1713
CHANG, EDMUND K. M.; GCM and Observational Diagnoses of the Seasonal and Interannual Variations of the Pacific Storm Track during the Cool Season, 1784–1800
CHAO, WINSTON C.; CHEN, BAODE; Multiple Quasi Equilibria of the ITCZ and the Origin of Monsoon Onset. Part II: Rotational ITCZ Attractors, 2820–2831
CHAO, WINSTON C.; CHEN, BAODE; The Origin of Monsoons, 3497–3507
CHARLSON, ROBERT J.; see FACCHINI, MARIA CRISTINA; 1465–1467
CHAUMAT, LAURE; see BRENGUIER, JEAN-LOUIS; 628–641
CHAUMAT, LAURE; BRENGUIER, JEAN-LOUIS; Droplet Spectra Broadening in Cumulus Clouds. Part II: Microscale Droplet Concentration Heterogeneities, 642–654
CHEN, BAODE; see CHAO, WINSTON C.; 2820–2831
CHEN, BAODE; see CHAO, WINSTON C.; 3497–3507
CHEN, FEI; WARNER, THOMAS T.; MANNING, KEVIN; Sensitivity of Orographic Moist Convection to Landscape Variability: A Study of the Buffalo Creek, Colorado, Flash Flood Case of 1996, 3204–3223
CHEN, JEN-HER; see KUO, HUNG-CHI; 1035–1050
CHEN, JEN-HER; see KUO, HUNG-CHI; 1310–1327
CHEN, PING; Thermally Forced Stationary Waves in a Quasigeostrophic System, 1585–1594
CHEN, PING; HOERLING, MARTIN P.; DOLE, RANDALL M.; The Origin of the Subtropical Anticyclones, 1827–1835
CHEN, YI-LIANG; see KUO, HUNG-CHI; 1310–1327
CHEN, YONGSHENG; YAU, M. K.; Spiral Bands in a Simulated Hurricane. Part I: Vortex Rossby Wave Verification, 2128–2145
CHENG, WILLIAM Y. Y.; WU, TING; COTTON, WILLIAM R.; Large-Eddy Simulations of the 26 November 1991 FIRE II Cirrus Case, 1017–1034
CHENG, Y.; see CANUTO, V. M.; 1169–1172
CHEONG, HYEONG-BIN; KIMURA, RYUJI; Excitation of the 10-Day and 16-Day Waves, 1129–1145
CHIANG, JOHN C. H.; ZEBIAK, STEPHEN E.; CANE, MARK A.; Relative Roles of Elevated Heating and Surface Temperature Gradients in Driving Anomalous Surface Winds over Tropical Oceans, 1371–1394
CHLOND, ANDREAS; see STEVENS, BJORN; 1870–1891
CHUN, HYE-YEONG; SONG, MYUNG-DUK; KIM, JEONG-WOO; BAIK, JONG-JIN; Effects of Gravity Wave Drag Induced by Cumulus Convection on the Atmospheric General Circulation, 302–319
CHÝLEK, P.; see LI, J.; 193–209
CIESIELSKI, PAUL E.; SCHUBERT, WAYNE H.; JOHNSON, RICHARD H.; Diurnal Variability of the Marine Boundary Layer during ASTEX, 2355–2376
CIESIELSKI, PAUL E.; see JOHNSON, RICHARD H.; 2729–2750
CLARK, TERRY L.; see LANE, TODD P.; 1249–1274
CLOTHIAUX, EUGENE E.; see KATO, SEIJI; 2895–2911
COLLINS, WILLIAM D.; Parameterization of Generalized Cloud Overlap for Radiative Calculations in General Circulation Models, 3224–3242
COLUCCI, STEPHEN J.; Planetary-Scale Preconditioning for the Onset of Blocking, 933–942
COMSTOCK, JENNIFER M.; see SASSEN, KENNETH; 2113–2127
COOK, KERRY H.; A Southern Hemisphere Wave Response to ENSO with Implications for Southern Africa Precipitation, 2146–2162
CORLETT, GARY K.; MONKS, PAUL S.; A Comparison of Total Column Ozone Values Derived from the Global Ozone Monitoring Experiment (GOME), the Tiros Operational Vertical Sounder (TOVS), and the Total Ozone Mapping Spectrometer (TOMS), 1103–1116
COSTA, ALEXANDRE A.; COTTON, WILLIAM R.; WALKO, ROBERT L.; PIELKE, ROGER A., SR.; JIANG, HONGLI; SST Sensitivities in Multiday TOGA COARE Cloud-Resolving Simulations, 253–268
COSTA, ALEXANDRE A.; COTTON, WILLIAM R.; WALKO, ROBERT L.; PIELKE, ROGER A., SR.; Coupled Ocean-Cloud-Resolving Simulations of the Air–Sea Interaction over the Equatorial Western Pacific, 3357–3375
COTTON, W. R.; see FINLEY, CATHERINE A.; 1597–1629
COTTON, WILLIAM R.; see COSTA, ALEXANDRE A.; 253–268
COTTON, WILLIAM R.; see CHENG, WILLIAM Y. Y.; 1017–1034
COTTON, WILLIAM R.; see LARSON, VINCENT E.; 1117–1128
COTTON, WILLIAM R.; see LARSON, VINCENT E.; 1978–1994
COTTON, WILLIAM R.; see COSTA, ALEXANDRE A.; 3357–3375
COTTURONE, JENNIFER A.; see JOHNSON, RICHARD H.; 2729–2750
CUNNOLD, DEREK M.; see BAKER, MICHAEL N.; 2210–2221
CUXART, JOAN; see STEVENS, BJORN; 1870–1891
DAVIS, A. B.; see GERBER, H.; 497–503
DAVIS, KENNETH J.; see YI, CHUIXIANG; 1288–1299
DAVOLIO, SILVIO; see FANTINI, MAURIZIO; 1146–1154
DELGENIO, ANTHONY D.; see SMITH, SAMANTHA A.; 451–461
DELSOLE, TIMOTHY; Optimally Persistent Patterns in Time-Varying Fields, 1341–1356
DELSOLE, TIMOTHY; A Simple Model for Transient Eddy Momentum Fluxes in the Upper Troposphere, 3019–3035
DELSOLE, TIMOTHY; A Theory for the Forcing and Dissipation in Stochastic Turbulence Models, 3762–3775
DESSLER, ANDREW E.; see SHERWOOD, STEVEN C.; 765–779
DIEHL, K.; see VOHL, O.; 3064–3072
DOBBIE, J. S.; see LI, J.; 193–209
DOLE, RANDALL M.; see CHEN, PING; 1827–1835
DORMAN, CLIVE E.; see KORA IN, DARKO; 1714–1731
DOUTRIAUX-BOUCHER, MARIE; see BURIEZ, JEAN-CLAUDE; 3007–3018
DRITSCHEL, D. G.; see MOHEBALHOJEH, A. R.; 2411–2426
DROEGEMEIER, KELVIN; see LAZARUS, STEVEN; 998–1016
DUAN, YIHONG; see CHAN, JOHNNY C. L.; 154–172
DUCK, THOMAS J.; WHITEWAY, JAMES A.; CARSWELL, ALLAN I.; The Gravity Wave–Arctic Stratospheric Vortex Interaction, 3581–3596

DUNKERTON, TIMOTHY J.; Quasi-Biennial and Subbiennial Variations of Stratospheric Trace Constituents Derived from HALOE Observations, 7–25
DURRAN, D. R.; see PIANI, C.; 3702–3723
DURRAN, DALE R.; see EPIFANIO, CRAIG C.; 1051–1065
DUYNKERKE, PETER G.; see STEVENS, BJORN; 1870–1891
EASTIN, MATTHEW D.; see KOSSIN, JAMES P.; 1079–1090
ECKLUND, WARNER L.; see SCHAFER, ROBERT; 2163–2179
EDWARDS, KATHLEEN A.; ROGERSON, AUDREY M.; WINANT, CLINTON D.; ROGERS, DAVID P.; Adjustment of the Marine Atmospheric Boundary Layer to a Coastal Cape, 1511–1528
EGGER, JOSEPH; Angular Momentum of $\beta$-Plane Flows, 2502–2508
EICHINGER, WILLIAM E.; see PORTÉ-AGEL, FERNANDO; 2673–2698
EMANUEL, KERRY A.; see MORSS, REBECCA E.; 210–232
EMANUEL, KERRY A.; see ROBE, FRANÇOISE R.; 1427–1445
EMANUEL, KERRY A.; see BONY, SANDRINE; 3158–3183
EMANUEL, KERRY A.; see ANDREAS, EDGAR L; 3741–3751
ENAGONIO, JANICE; MONTGOMERY, MICHAEL T.; Tropical Cyclogenesis via Convectively Forced Vortex Rossby Waves in a Shallow Water Primitive Equation Model, 685–705
EPIFANIO, CRAIG C.; DURRAN, DALE R.; Three-Dimensional Effects in High-Drag-State Flows over Long Ridges, 1051–1065
ERKELENS, J. S.; VENEMA, V. K. C.; RUSSCHENBERG, H. W. J.; LIGTHART, L. P.; Coherent Scattering of Microwaves by Particles: Evidence from Clouds and Smoke, 1091–1102
ESHEL, GIDON; FARRELL, BRIAN F.; *Thermodynamics of Eastern Mediterranean Rainfall Variability, 87–92
FACCHINI, MARIA CRISTINA; MIRCEA, MIHAELA; FUZZI, SANDRO; CHARLSON, ROBERT J.; *Comments on "Influence of Soluble Surfactant Properties on the Activation of Aerosol Particles Containing Inorganic Solute," 1465–1467
FAIRALL, C. W.; see ZILITINKEVICH, S. S.; 320–325
FANTINI, MAURIZIO; DAVOLIO, SILVIO; Instability of Neutral Eady Waves and Orography, 1146–1154
FARRELL, BRIAN F.; see ESHEL, GIDON; 87–92
FARRELL, BRIAN F.; IOANNOU, PETROS J.; Accurate Low-Dimensional Approximation of the Linear Dynamics of Fluid Flow, 2771–2789
FARRELL, BRIAN F.; IOANNOU, PETROS J.; State Estimation Using a Reduced-Order Kalman Filter, 3666–3680
FEBVRE, GUY; see AURIOL, FREDERIQUE; 3376–3390
FEDOROVICH, E.; NIEUWSTADT, F. T. M.; KAISER, R.; Numerical and Laboratory Study of Horizontally Evolving Convective Boundary Layer. Part I: Transition Regimes and Development of the Mixed Layer, 70–86
FEDOROVICH, E.; NIEUWSTADT, F. T. M.; KAISER, R.; Numerical and Laboratory Study of Horizontally Evolving Convective Boundary Layer. Part II: Effects of Elevated Wind Shear and Surface Roughness, 546–560
FELDSTEIN, STEVEN B.; Friction Torque Dynamics Associated with Intraseasonal Length-of-Day Variability, 2942–2953
FERRETTI, ROSSELLA; see ROTUNNO, RICHARD; 1732–1749
FIELD, PAUL R.; see LARSON, VINCENT E.; 1117–1128
FIELD, PAUL R.; see LARSON, VINCENT E.; 1978–1994
FINLEY, CATHERINE A.; COTTON, W. R.; PIELKE, R. A., SR.; Numerical Simulation of Tornadogenesis in a High-Precipitation Supercell. Part I: Storm Evolution and Transition into a Bow Echo, 1597–1629
FITZJARRALD, DAVID R.; see ACEVEDO, OTÁVIO C.; 2650–2667
FRANCIS, GENE L.; SALBY, MURRY L.; Radiative Influence of Antarctica on the Polar-Night Vortex, 1300–1309
FREDERIKSEN, JORGEN S.; BRANSTATOR, GRANT; Seasonal and Intraseasonal Variability of Large-Scale Barotropic Modes, 50–69
FRITTS, DAVID C.; see VADAS, SHARON L.; 2249–2279
FUZZI, SANDRO; see FACCHINI, MARIA CRISTINA; 1465–1467
GABRIEL, PHILIP M.; see STEPHENS, GRAEME L.; 3391–3409
GABRIEL, PHILIP M.; PARTAIN, PHILIP T.; STEPHENS, GRAEME L.; Parameterization of Atmospheric Radiative Transfer. Part II: Selection Rules, 3411–3423
GAGE, KENNETH S.; see SCHAFER, ROBERT; 2163–2179
GALANI, E.; see KAZANTZIDIS, A.; 1529–1539
GARCIA, MATTHEW; see SCHUBERT, WAYNE H.; 3148–3157
GAYET, JEAN-FRANÇOIS; see AURIOL, FREDERIQUE; 3376–3390
GEORGELIN, MARC; LOTT, FRANÇOIS; The Transfer of Momentum by Trapped Lee Waves: Case of the IOP 3 of PYREX, 3563–3580
GERBER, H.; JENSEN, J. B.; DAVIS, A. B.; MARSHAK, A.; WISCOMBE, W. J.; Spectral Density of Cloud Liquid Water Content at High Frequencies, 497–503
GHIL, MICHAEL; see HUBER, MATTHEW; 2377–2394
GIANNITSIS, CONSTANTINE; LINDZEN, RICHARD S.; Nonlinear Saturation of Topographically Forced Rossby Waves in a Barotropic Model, 2927–2941
GILMOUR, ISLA; SMITH, LEONARD A.; BUIZZA, ROBERTO; Linear Regime Duration: Is 24 Hours a Long Time in Synoptic Weather Forecasting?, 3525–3539
GIRARD, ERIC; BLANCHET, JEAN-PIERRE; Microphysical Parameterization of Arctic Diamond Dust, Ice Fog, and Thin Stratus for Climate Models, 1181–1198
GIRARD, ERIC; BLANCHET, JEAN-PIERRE; Simulation of Arctic Diamond Dust, Ice Fog, and Thin Stratus Using an Explicit Aerosol–Cloud–Radiation Model, 1199–1221
GIUSTI, F.; see RICHIARDONE, R.; 2013–2017
GOLAZ, JEAN-CHRISTOPHE; see LARSON, VINCENT E.; 1117–1128
GOLAZ, JEAN-CHRISTOPHE; see LARSON, VINCENT E.; 1978–1994
GOTTSCHALCK, JON; see ZHU, PING; 1409–1426
GRABOWSKI, W. W.; see VAILLANCOURT, P. A.; 1945–1964
GRABOWSKI, WOJCIECH W.; Coupling Cloud Processes with the Large-Scale Dynamics Using the Cloud-Resolving Convection Parameterization (CRCP), 978–997
GRACHEV, A. A.; see ZILITINKEVICH, S. S.; 320–325
GRASSO, LEWIS D.; see NOLAN, DAVID S.; 3243–3270
GRISOGONO, BRANKO; OERLEMANS, JOHANNES; *Katabatic Flow: Analytic Solution for Gradually Varying Eddy Diffusivities, 3349–3354
GROSS, M. R.; see BEYERLE, G.; 1275–1287
HAERTEL, PATRICK T.; JOHNSON, RICHARD H.; TULICH, STEFAN N.; Some Simple Simulations of Thunderstorm Outflows, 504–516
HAKIM, GREGORY J.; see MURAKI, DAVID J.; 237–252
HAMILTON, KEVIN; see KOSHYK, JOHN N.; 329–348
HAMILTON, KEVIN; WILSON, R. JOHN; HEMLER, RICHARD S.; Spontaneous Stratospheric QBO-like Oscillations Simulated by the GFDL SKYHI General Circulation Model, 3271–3292
HAN, KUNHEE; see KIM, JAE H.; 2699–2708
HANER, D. A.; see BEYERLE, G.; 1275–1287
HARNIK, NILI; LINDZEN, RICHARD S.; The Effect of Reflecting Surfaces on the Vertical Structure and Variability of Stratospheric Planetary Waves, 2872–2894
HARTMANN, DENNIS L.; see MALONEY, ERIC D.; 2545–2558
HARTMANN, DENNIS L.; MALONEY, ERIC D.; The Madden–Julian Oscillation, Barotropic Dynamics, and North Pacific Tropical Cyclone Formation. Part II: Stochastic Barotropic Modeling, 2559–2570
HARTMANN, DENNIS L.; see LORENZ, DAVID J.; 3312–3327
HASHIMOTO, GEORGE L.; see IMAMURA, TAKESHI; 3597–3612
HAUCK, CHRISTIAN; WIRTH, VOLKMAR; Diagnosing the Impact of Stratospheric Planetary Wave Breaking in a Linear Model, 1357–1370
HAUSMAN, SCOTT A.; see SCHUBERT, WAYNE H.; 3148–3157
HELD, ISAAC M.; The Partitioning of the Poleward Energy Transport between the Tropical Ocean and Atmosphere, 943–948
HELD, ISAAC M.; see PAULUIS, OLIVIER; 1178–1179
HEMLER, RICHARD S.; see HAMILTON, KEVIN; 3271–3292
HOERLING, MARTIN P.; see CHEN, PING; 1827–1835

HÖGSTRÖM, ULF; see JOHANSSON, CECILIA; 1549–1566
HOSKINS, B. J.; see BADGER, J.; 38–49
HOWARD, A.; see CANUTO, V. M.; 1169–1172
HU, Y.; PIERREHUMBERT, R. T.; The Advection–Diffusion Problem for Stratospheric Flow. Part I: Concentration Probability Distribution Function, 1493–1510
HUBER, G.; see VOHL, O.; 3064–3072
HUBER, MATTHEW; MCWILLIAMS, JAMES C.; GHIL, MICHAEL; A Climatology of Turbulent Dispersion in the Troposphere, 2377–2394
HUDSON, JAMES G.; YUM, SEONG SOO; Maritime–Continental Drizzle Contrasts in Small Cumuli, 915–926
IMAMURA, TAKESHI; HASHIMOTO, GEORGE L.; Microphysics of Venusian Clouds in Rising Tropical Air, 3597–3612
IOANNOU, PETROS J.; see FARRELL, BRIAN F.; 2771–2789
IOANNOU, PETROS J.; see BAKAS, NIKOLAOS A.; 2790–2806
IOANNOU, PETROS J.; see FARRELL, BRIAN F.; 3666–3680
IWASAKI, TOSHIKI; Atmospheric Energy Cycle Viewed from Wave–Mean-Flow Interaction and Lagrangian Mean Circulation, 3036–3052
JACKSON, D. R.; METHVEN, J.; POPE, V. D.; Transport in the Low-Latitude Tropopause Zone Diagnosed Using Particle Trajectories, 173–192
JACKSON, D. R.; AUSTIN, J.; BUTCHART, N.; *An Updated Climatology of the Troposphere–Stratosphere Configuration of the Met Office's Unified Model, 2000–2008
JACKSON, P. L.; see REASON, C. J. C.; 1892–1906
JENG, BAO-FONG; see PENG, MELINDA S.; 2222–2239
JENSEN, J. B.; see GERBER, H.; 497–503
JIANG, HONGLI; see COSTA, ALEXANDRE A.; 253–268
JOHANSSON, CECILIA; SMEDMAN, ANN-SOFI; HÖGSTRÖM, ULF; BRASSEUR, JAMES G.; KHANNA, SAMIR; Critical Test of the Validity of Monin–Obukhov Similarity during Convective Conditions, 1549–1566
JOHNSON, RICHARD H.; see HAERTEL, PATRICK T.; 504–516
JOHNSON, RICHARD H.; see CIESIELSKI, PAUL E.; 2355–2376
JOHNSON, RICHARD H.; CIESIELSKI, PAUL E.; COTTURONE, JENNIFER A.; Multiscale Variability of the Atmospheric Mixed Layer over the Western Pacific Warm Pool, 2729–2750
JOHNSTON, PAUL E.; see SCHAFER, ROBERT; 2163–2179
JONES, R. W.; see WILLOUGHBY, H. E.; 1907–1923
JOURDAN, OLIVIER; see AURIOL, FREDERIQUE; 3376–3390
JOYCE, LARA E.; see LIN, YUH-LANG; 2957–2988
JUNG, JOON-HEE; KONOR, CELAL S.; MECHOSO, CARLOS R.; ARAKAWA, AKIO; A Study of the Stratospheric Major Warming and Subsequent Flow Recovery during the Winter of 1979 with an Isentropic Vertical Coordinate Model, 2630–2649
KAISER, R.; see FEDOROVICH, E.; 70–86
KAISER, R.; see FEDOROVICH, E.; 546–560
KATO, SEIJI; MACE, GERALD G.; CLOTHIAUX, EUGENE E.; LILJEGREN, JAMES C.; AUSTIN, RICHARD T.; Doppler Cloud Radar Derived Drop Size Distributions in Liquid Water Stratus Clouds, 2895–2911
KATO, SEIJI; SMITH, G. LOUIS; BARKER, HOWARD W.; *Gamma-Weighted Discrete Ordinate Two-Stream Approximation for Computation of Domain-Averaged Solar Irradiance, 3797–3803
KAY, M. J.; BOX, M. A.; TRAUTMANN, THOMAS; LANDGRAF, JOCHEN; Actinic Flux and Net Flux Calculations in Radiative Transfer—A Comparative Study of Computational Efficiency, 3752–3761
KAZADZIS, S.; see KAZANTZIDIS, A.; 1529–1539
KAZANTZIDIS, A.; BALIS, D. S.; BAIS, A. F.; KAZADZIS, S.; GALANI, E.; KOSMIDIS, E.; BLUMTHALER, M.; Comparison of Model Calculations with Spectral UV Measurements during the SUSPEN Campaign: The Effect of Aerosols, 1529–1539
KEENAN, THOMAS D.; see SCHAFER, ROBERT; 2163–2179
KEFALIAKOS, GEORGE E.; see BAKAS, NIKOLAOS A.; 2790–2806
KEPERT, JEFF; The Dynamics of Boundary Layer Jets within the Tropical Cyclone Core. Part I: Linear Theory, 2469–2484
KEPERT, JEFF; WANG, YUQING; The Dynamics of Boundary Layer Jets within the Tropical Cyclone Core. Part II: Nonlinear Enhancement, 2485–2501
KHAIN, A.; see PINSKY, M.; 742–764
KHAIN, A.; PINSKY, M.; SHAPIRO, M.; POKROVSKY, A.; Collision Rate of Small Graupel and Water Drops, 2571–2595
KHANNA, SAMIR; see JOHANSSON, CECILIA; 1549–1566
KIM, HYUN-KYUNG; LEE, SUKYOUNG; Hadley Cell Dynamics in a Primitive Equation Model. Part I: Axisymmetric Flow, 2845–2858
KIM, HYUN-KYUNG; LEE, SUKYOUNG; Hadley Cell Dynamics in a Primitive Equation Model. Part II: Nonaxisymmetric Flow, 2859–2871
KIM, JAE H.; NEWCHURCH, M. J.; HAN, KUNHEE; Distribution of Tropical Tropospheric Ozone Determined by the Scan-Angle Method Applied to TOMS Measurements, 2699–2708
KIM, JAE-HOON; see WALISER, DUANE E.; 2596–2615
KIM, JEONG-WOO; see CHUN, HYE-YEONG; 302–319
KIMURA, RYUJI; see CHEONG, HYEONG-BIN; 1129–1145
KJOME, N. T.; see BEYERLE, G.; 1275–1287
KNIGHT, CHARLES A.; see LASHER-TRAPP, SONIA G.; 3545–3562
KOLLIAS, P.; ALBRECHT, B. A.; LHERMITTE, R.; SAVTCHENKO, A.; Radar Observations of Updrafts, Downdrafts, and Turbulence in Fair-Weather Cumuli, 1750–1766
KONOR, CELAL S.; see JUNG, JOON-HEE; 2630–2649
KORA IN, DARKO; LEWIS, JOHN; THOMPSON, WILLIAM T.; DORMAN, CLIVE E.; BUSINGER, JOOST A.; Transition of Stratus into Fog along the California Coast: Observations and Modeling, 1714–1731
KOSHYK, JOHN N.; HAMILTON, KEVIN; The Horizontal Kinetic Energy Spectrum and Spectral Budget Simulated by a High-Resolution Troposphere–Stratosphere–Mesosphere GCM, 329–348
KOSMIDIS, E.; see KAZANTZIDIS, A.; 1529–1539
KOSSIN, JAMES P.; EASTIN, MATTHEW D.; Two Distinct Regimes in the Kinematic and Thermodynamic Structure of the Hurricane Eye and Eyewall, 1079–1090
KOSSIN, JAMES P.; SCHUBERT, WAYNE H.; Mesovortices, Polygonal Flow Patterns, and Rapid Pressure Falls in Hurricane-like Vortices, 2196–2209
KOVACS, THOMAS A.; see MILLER, JENNIFER A.; 3508–3524
KRATZ, K. -L.; see VOHL, O.; 3064–3072
KRUMMEL, P. B.; see SZCZODRAK, M.; 2912–2926
KUO, HUNG-CHI; CHEN, JEN-HER; WILLIAMS, R. T.; CHANG, C. -P.; Rossby Waves in Zonally Opposing Mean Flow: Behavior in Northwest Pacific Summer Monsoon, 1035–1050
KUO, HUNG-CHI; WILLIAMS, R. T.; CHEN, JEN-HER; CHEN, YI-LIANG; Topographic Effects on Barotropic Vortex Motion: No Mean Flow, 1310–1327
KUO, HUNG-CHI; see SCHUBERT, WAYNE H.; 3148–3157
LABONNOTE, LAURENT; see AURIOL, FREDERIQUE; 3376–3390
LAIRD, NEIL F.; OCHS, HARRY T., III; RAUBER, ROBERT M.; MILLER, L. JAY; Corrigendum, 2668–2669
LANDGRAF, JOCHEN; see KAY, M. J.; 3752–3761
LANE, TODD P.; REEDER, MICHAEL J.; CLARK, TERRY L.; Numerical Modeling of Gravity Wave Generation by Deep Tropical Convection, 1249–1274
LANE, TODD P.; REEDER, MICHAEL J.; Convectively Generated Gravity Waves and Their Effect on the Cloud Environment, 2427–2440
LAPPEN, CARA-LYN; RANDALL, DAVID A.; Toward a Unified Parameterization of the Boundary Layer and Moist Convection. Part I: A New Type of Mass-Flux Model, 2021–2036
LAPPEN, CARA-LYN; RANDALL, DAVID A.; Toward a Unified Parameterization of the Boundary Layer and Moist Convection. Part II: Lateral Mass Exchanges and Subplume-Scale Fluxes, 2037–2051
LAPPEN, CARA-LYN; RANDALL, DAVID A.; Toward a Unified Parameterization of the Boundary Layer and Moist Convection. Part III: Simulations of Clear and Cloudy Convection, 2052–2072

LARSON, VINCENT E.; WOOD, ROBERT; FIELD, PAUL R.; GOLAZ, JEAN-CHRISTOPHE; VONDER HAAR, THOMAS H.; COTTON, WILLIAM R.; Systematic Biases in the Microphysics and Thermodynamics of Numerical Models That Ignore Subgrid-Scale Variability, 1117–1128
LARSON, VINCENT E.; WOOD, ROBERT; FIELD, PAUL R.; GOLAZ, JEAN-CHRISTOPHE; HAAR, THOMAS H. VONDER; COTTON, WILLIAM R.; Small-Scale and Mesoscale Variability of Scalars in Cloudy Boundary Layers: One-Dimensional Probability Density Functions, 1978–1994
LASHER-TRAPP, SONIA G.; KNIGHT, CHARLES A.; STRAKA, JERRY M.; Early Radar Echoes from Ultragiant Aerosol in a Cumulus Congestus: Modeling and Observations, 3545–3562
LAU, K. M.; see WALISER, DUANE E.; 2596–2615
LAU, K.-M.; see PENG, L.; 877–895
LAZARUS, STEVEN; SHAPIRO, ALAN; DROEGEMEIER, KELVIN; Application of the Zhang–Gal-Chen Single-Doppler Velocity Retrieval to a Deep Convective Storm, 998–1016
LEE, SUKYOUNG; see KIM, HYUN-KYUNG; 2845–2858
LEE, SUKYOUNG; see KIM, HYUN-KYUNG; 2859–2871
LEUTBECHER, MARTIN; Surface Pressure Drag for Hydrostatic Two-Layer Flow over Axisymmetric Mountains, 797–807
LEWELLEN, D. C.; LEWELLEN, W. S.; The Effects of Aircraft Wake Dynamics on Contrail Development, 390–406
LEWELLEN, DAVID C.; see STEVENS, BJORN; 1870–1891
LEWELLEN, W. S.; see LEWELLEN, D. C.; 390–406
LEWIS, JOHN; see KORA IN, DARKO; 1714–1731
LHERMITTE, R.; see KOLLIAS, P.; 1750–1766
LI, J.; WONG, J. G. D.; DOBBIE, J. S.; CHÝLEK, P.; Parameterization of the Optical Properties of Sulfate Aerosols, 193–209
LI, ZHANQING; TRISHCHENKO, ALEXANDER P.; Quantifying Uncertainties in Determining SW Cloud Radiative Forcing and Cloud Absorption due to Variability in Atmospheric Conditions, 376–389
LIGTHART, L. P.; see ERKELENS, J. S.; 1091–1102
LILJEGREN, JAMES C.; see KATO, SEIJI; 2895–2911
LIN, CHING-LONG; CHAI, TIANFENG; SUN, JUANZHEN; Retrieval of Flow Structures in a Convective Boundary Layer Using an Adjoint Model: Identical Twin Experiments, 1767–1783
LIN, YUH-LANG; JOYCE, LARA E.; A Further Study of the Mechanisms of Cell Regeneration, Propagation, and Development within Two-Dimensional Multicell Storms, 2957–2988
LINDZEN, RICHARD S.; see HARNIK, NILI; 2872–2894
LINDZEN, RICHARD S.; see GIANNITSIS, CONSTANTINE; 2927–2941
LINDZEN, RICHARD S.; see ZURITA, PABLO; 3443–3462
LIST, ROLAND; see BERDEKLIS, PETER; 2751–2770
LIU, CHANGHAI; MONCRIEFF, MITCHELL W.; Cumulus Ensembles in Shear: Implications for Parameterization, 2832–2842
LIU, SONG; see BEARD, KENNETH V.; 1395–1408
LIU, YONGMING; MU, MU; Nonlinear Stability of the Generalized Eady Model, 821–827
LOEB, NORMAN G.; see BURIEZ, JEAN-CLAUDE; 3007–3018
LORENZ, DAVID J.; HARTMANN, DENNIS L.; Eddy–Zonal Flow Feedback in the Southern Hemisphere, 3312–3327
LOTT, FRANÇOIS; see GEORGELIN, MARC; 3563–3580
LYNN, BARRY H.; TAO, WEI-KUO; ABRAMOPOULOS, FRANK; A Parameterization for the Triggering of Landscape-Generated Moist Convection. Part I: Analysis of High-Resolution Model Results, 575–592
LYNN, BARRY H.; TAO, WEI-KUO; A Parameterization for the Triggering of Landscape-Generated Moist Convection. Part II: Zero-Order and First-Order Closure, 593–607
MACE, GERALD G.; see KATO, SEIJI; 2895–2911
MACVEAN, MALCOLM K.; see STEVENS, BJORN; 1870–1891
MAJDA, ANDREW J.; SHEFTER, MICHAEL G.; Waves and Instabilities for Model Tropical Convective Parameterizations, 896–914
MAJDA, ANDREW J.; SHEFTER, MICHAEL G.; Models for Stratiform Instability and Convectively Coupled Waves, 1567–1584
MAK, MANKIN; Nonhydrostatic Barotropic Instability: Applicability to Nonsupercell Tornadogenesis, 1965–1977
MAKIN, VLADIMIR K.; see MEIRINK, JAN F.; 3626–3638
MALONEY, ERIC D.; HARTMANN, DENNIS L.; The Madden–Julian Oscillation, Barotropic Dynamics, and North Pacific Tropical Cyclone Formation. Part I: Observations, 2545–2558
MALONEY, ERIC D.; see HARTMANN, DENNIS L.; 2559–2570
MANNING, KEVIN; see CHEN, FEI; 3204–3223
MAPES, BRIAN E.; WU, XIAOQING; *Convective Eddy Momentum Tendencies in Long Cloud-Resolving Model Simulations, 517–526
MARGOLIN, LEN G.; see SMOLARKIEWICZ, PIOTR K.; 349–364
MARSHAK, A.; see GERBER, H.; 497–503
MARSHAK, ALEXANDER; see VÁRNAI, TAMÁS; 1540–1548
MARSHAK, ALEXANDER; see BARKER, HOWARD W.; 2989–3006
MASUNAGA, HIROHIKO; NAKAJIMA, TERUYUKI; The Effective Cloud Fraction of Broken Clouds Obtained by Multistream Radiative Transfer. Part I: Longwave Radiation, 2455–2467
MAY, PETER T.; see SCHAFER, ROBERT; 2163–2179
MCDERMID, I. S.; see BEYERLE, G.; 1275–1287
MCGEE, T. J.; see BEYERLE, G.; 1275–1287
MCGUFFIE, KENDAL; see SCHAFER, ROBERT; 2163–2179
MCINTYRE, M. E.; see WARNER, C. D.; 1837–1857
MCINTYRE, MICHAEL E.; NORTON, WARWICK A.; Corrigendum, 949
MCWILLIAMS, JAMES C.; see HUBER, MATTHEW; 2377–2394
MECHOSO, CARLOS R.; see JUNG, JOON-HEE; 2630–2649
MEIRINK, JAN F.; MAKIN, VLADIMIR K.; The Impact of Sea Spray Evaporation in a Numerical Weather Prediction Model, 3626–3638
MENEVEAU, CHARLES; see PORTÉ-AGEL, FERNANDO; 2673–2698
METHVEN, J.; see JACKSON, D. R.; 173–192
MILLER, JENNIFER A.; KOVACS, THOMAS A.; BANNON, PETER R.; A Shallow-Water Model of the Diurnal Dryline, 3508–3524
MILLER, L. JAY; see LAIRD, NEIL F.; 2668–2669
MILLIFF, RALPH F.; MORZEL, JAN; The Global Distribution of the Time-Average Wind Stress Curl from NSCAT, 109–131
MIRCEA, MIHAELA; see FACCHINI, MARIA CRISTINA; 1465–1467
MITRA, S. K.; see VOHL, O.; 3064–3072
MIZUTA, RYO; YODEN, SHIGEO; Chaotic Mixing and Transport Barriers in an Idealized Stratospheric Polar Vortex, 2616–2629
MO, KINGTSE; BELL, GERALD D.; THIAW, WASSILA M.; Impact of Sea Surface Temperature Anomalies on the Atlantic Tropical Storm Activity and West African Rainfall, 3477–3496
MOHEBALHOJEH, A. R.; DRITSCHEL, D. G.; Hierarchies of Balance Conditions for the *f*-Plane Shallow-Water Equations, 2411–2426
MONAHAN, ADAM HUGH; PANDOLFO, LIONEL; Meridional Localization of Planetary Waves in Stochastic Zonal Flows, 808–820
MONCRIEFF, MITCHELL W.; see YANO, JUN-ICHI; 850–867
MONCRIEFF, MITCHELL W.; see YANO, JUN-ICHI; 868–876
MONCRIEFF, MITCHELL W.; see WU, XIAOQING; 1155–1168
MONCRIEFF, MITCHELL W.; see LIU, CHANGHAI; 2832–2842
MONKS, PAUL S.; see CORLETT, GARY K.; 1103–1116
MONTGOMERY, MICHAEL T.; SNELL, HOLLY D.; YANG, ZONGJUN; Axisymmetric Spindown Dynamics of Hurricane-like Vortices, 421–435
MONTGOMERY, MICHAEL T.; see ENAGONIO, JANICE; 685–705
MONTGOMERY, MICHAEL T.; see REASOR, PAUL D.; 2306–2330
MONTGOMERY, MICHAEL T.; see NOLAN, DAVID S.; 3243–3270
MORGAN, MICHAEL C.; A Potential Vorticity and Wave Activity Diagnosis of Optimal Perturbation Evolution, 2518–2544
MORSS, REBECCA E.; EMANUEL, KERRY A.; SNYDER, CHRIS; Idealized Adaptive Observation Strategies for Improving Numerical Weather Prediction, 210–232
MORZEL, JAN; see MILLIFF, RALPH F.; 109–131
MU, MU; see LIU, YONGMING; 821–827
MURAKI, DAVID J.; HAKIM, GREGORY J.; Balanced Asymmetries of Waves on the Tropopause, 237–252
MUSCHINSKI, A.; see WORTHINGTON, R. M.; 707–723

NAKAJIMA, TERUYUKI; see MASUNAGA, HIROHIKO; 2455–2467
NAKAMURA, HISASHI ; see TAKAYA, KOUTAROU; 608–627
NAKAMURA, NOBORU; A New Look at Eddy Diffusivity as a Mixing Diagnostic, 3685–3701
NEGGERS, ROEL A. J.; see STEVENS, BJORN; 1870–1891
NEVEN, E. C.; Linear Stability of Modons on a Sphere, 2280–2305
NEWCHURCH, M. J.; see KIM, JAE H.; 2699–2708
NIEUWSTADT, F. T. M.; see FEDOROVICH, E.; 70–86
NIEUWSTADT, F. T. M.; see FEDOROVICH, E.; 546–560
NILSSON, JOHAN; see SOBEL, ADAM H.; 3650–3665
NOLAN, DAVID S.; MONTGOMERY, MICHAEL T.; GRASSO, LEWIS D.; The Wavenumber-1 Instability and Trochoidal Motion of Hurricane-like Vortices, 3243–3270
NORTON, WARWICK A.; see MCINTYRE, MICHAEL E.; 949
OCHS, HARRY T., III; see BEARD, KENNETH V.; 1395–1408
OCHS, HARRY T., III; see LAIRD, NEIL F.; 2668–2669
OERLEMANS, JOHANNES; see GRISOGONO, BRANKO; 3349–3354
OOYAMA, KATSUYUKI V.; A Dynamic and Thermodynamic Foundation for Modeling the Moist Atmosphere with Parameterized Microphysics, 2073–2102
OOYAMA, KATSUYUKI V.; see SCHUBERT, WAYNE H.; 3148–3157
ORTLAND, DAVID A.; see SMITH, ANNE K.; 3116–3134
OTTE, MARTIN J.; WYNGAARD, JOHN C.; Stably Stratified Interfacial-Layer Turbulence from Large-Eddy Simulation, 3424–3442
PANDOLFO, LIONEL; see MONAHAN, ADAM HUGH; 808–820
PARLANGE, MARC B.; see PORTÉ-AGEL, FERNANDO; 2673–2698
PAROL, FRÉDÉRIC; see BURIEZ, JEAN-CLAUDE; 3007–3018
PARTAIN, PHILIP T.; see STEPHENS, GRAEME L.; 3391–3409
PARTAIN, PHILIP T.; see GABRIEL, PHILIP M.; 3411–3423
PAULUIS, OLIVIER; BALAJI, V.; HELD, ISAAC M.; *Reply, 1178–1179
PELTIER, W. R.; see AFANASYEV, YA. D.; 132–153
PELTIER, W. R.; see YAMAZAKI, YASUHIRO H.; 675–683
PELTIER, W. R.; see YAMAZAKI, YASUHIRO H.; 780–792
PENG, L.; SUI, C.-H.; LAU, K.-M.; TAO, W.-K.; Genesis and Evolution of Hierarchical Cloud Clusters in a Two-Dimensional Cumulus-Resolving Model, 877–895
PENG, MELINDA S.; POWELL, JOHN H.; WILLIAMS, R. T.; JENG, BAO-FONG; Boundary Layer Effects on Fronts over Topography, 2222–2239
PIANI, C.; DURRAN, D. R.; A Numerical Study of Stratospheric Gravity Waves Triggered by Squall Lines Observed during the TOGA COARE and COPT-81 Experiments, 3702–3723
PIELKE, R. A., SR.; see FINLEY, CATHERINE A.; 1597–1629
PIELKE, ROGER A., SR.; see COSTA, ALEXANDRE A.; 253–268
PIELKE, ROGER A., SR.; see COSTA, ALEXANDRE A.; 3357–3375
PIERREHUMBERT, R. T.; see HU, Y.; 1493–1510
PINSKY, M.; KHAIN, A.; SHAPIRO, M.; Collision Efficiency of Drops in a Wide Range of Reynolds Numbers: Effects of Pressure on Spectrum Evolution, 742–764
PINSKY, M.; see KHAIN, A.; 2571–2595
PLUMB, R. ALAN; see POPOVIC, JELENA M.; 93–104
POKROVSKY, A.; see KHAIN, A.; 2571–2595
POLVANI, LORENZO M.; see SOBEL, ADAM H.; 3650–3665
POPE, V. D.; see JACKSON, D. R.; 173–192
POPOVIC, JELENA M.; PLUMB, R. ALAN; *Eddy Shedding from the Upper-Tropospheric Asian Monsoon Anticyclone, 93–104
PORTÉ-AGEL, FERNANDO; PARLANGE, MARC B.; MENEVEAU, CHARLES; EICHINGER, WILLIAM E.; A Priori Field Study of the Subgrid-Scale Heat Fluxes and Dissipation in the Atmospheric Surface Layer, 2673–2698
POWELL, JOHN H.; see PENG, MELINDA S.; 2222–2239
PRIETO, RICARDO; SCHUBERT, WAYNE H.; Analytical Predictions for Zonally Symmetric Equilibrium States of the Stratospheric Polar Vortex, 2709–2728
PROTAT, ALAIN; ZAWADZKI, ISZTAR; CAYA, ALAIN; Kinematic and Thermodynamic Study of a Shallow Hailstorm Sampled by the McGill Bistatic Multiple-Doppler Radar Network, 1222–1248
PRUPPACHER, H. R.; see VOHL, O.; 3064–3072
RANDALL, DAVID A.; see XU, KUAN-MAN; 1334–1338
RANDALL, DAVID A.; see XU, KUAN-MAN; 1630–1649
RANDALL, DAVID A.; see LAPPEN, CARA-LYN; 2021–2036
RANDALL, DAVID A.; see LAPPEN, CARA-LYN; 2037–2051
RANDALL, DAVID A.; see LAPPEN, CARA-LYN; 2052–2072
RAUBER, ROBERT M.; see LAIRD, NEIL F.; 2668–2669
RAYMOND, DAVID J.; A New Model of the Madden–Julian Oscillation, 2807–2819
REASON, C. J. C.; TORY, K. J.; JACKSON, P. L.; A Model Investigation of the Dynamics of a Coastally Trapped Disturbance, 1892–1906
REASOR, PAUL D.; MONTGOMERY, MICHAEL T.; Three-Dimensional Alignment and Corotation of Weak, TC-like Vortices via Linear Vortex Rossby Waves, 2306–2330
REEDER, MICHAEL J.; see LANE, TODD P.; 1249–1274
REEDER, MICHAEL J.; see LANE, TODD P.; 2427–2440
RENNÓ, NILTON O.; BLUESTEIN, HOWARD B.; A Simple Theory for Waterspouts, 927–932
RENNÓ, NILTON O.; *Comments on "Frictional Dissipation in a Precipitating Atmosphere," 1173–1177
RICHIARDONE, R.; GIUSTI, F.; *On the Stability Criterion in a Saturated Atmosphere, 2013–2017
ROBE, FRANÇOISE R.; EMANUEL, KERRY A.; The Effect of Vertical Wind Shear on Radiative–Convective Equilibrium States, 1427–1445
ROGERS, DAVID P.; see STRÖM, LINDA; 953–977
ROGERS, DAVID P.; see EDWARDS, KATHLEEN A.; 1511–1528
ROGERSON, AUDREY M.; see EDWARDS, KATHLEEN A.; 1511–1528
ROOD, M. J.; WILLIAMS, A. L.; *Reply, 1468–1473
ROSEN, J. M.; see BEYERLE, G.; 1275–1287
ROTUNNO, RICHARD; see WELCH, WENDELL T.; 1477–1492
ROTUNNO, RICHARD; FERRETTI, ROSSELLA; Mechanisms of Intense Alpine Rainfall, 1732–1749
RUSSCHENBERG, H. W. J.; see ERKELENS, J. S.; 1091–1102
SALBY, MURRY L.; see FRANCIS, GENE L.; 1300–1309
SALBY, MURRY L.; CALLAGHAN, PATRICK F.; Seasonal Amplification of the 2-Day Wave: Relationship between Normal Mode and Instability, 1858–1869
SAMELSON, R. M.; Periodic Orbits and Disturbance Growth for Baroclinic Waves, 436–450
SAMELSON, ROGER M.; TZIPERMAN, ELI; Instability of the Chaotic ENSO: The Growth-Phase Predictability Barrier, 3613–3625
SÁNCHEZ, ENRIQUE; see STEVENS, BJORN; 1870–1891
SANTOSO, EDI; STULL, ROLAND; Similarity Equations for Wind and Temperature Profiles in the Radix Layer, at the Bottom of the Convective Boundary Layer, 1446–1464
SARACHIK, E. S.; see WU, ZHAOHUA; 724–741
SASSEN, KENNETH; CAMPBELL, JAMES R.; A Midlatitude Cirrus Cloud Climatology from the Facility for Atmospheric Remote Sensing. Part I: Macrophysical and Synoptic Properties, 481–496
SASSEN, KENNETH; BENSON, SALLY; A Midlatitude Cirrus Cloud Climatology from the Facility for Atmospheric Remote Sensing. Part II: Microphysical Properties Derived from Lidar Depolarization, 2103–2112
SASSEN, KENNETH; COMSTOCK, JENNIFER M.; A Midlatitude Cirrus Cloud Climatology from the Facility for Atmospheric Remote Sensing. Part III: Radiative Properties, 2113–2127
SATOMURA, TAKEHIKO; see SHIGE, SHOICHI; 3724–3740
SAVTCHENKO, A.; see KOLLIAS, P.; 1750–1766
SCHÄFER, H. J.; see BEYERLE, G.; 1275–1287
SCHAFER, ROBERT; MAY, PETER T.; KEENAN, THOMAS D.; MCGUFFIE, KENDAL; ECKLUND, WARNER L.; JOHNSTON, PAUL E.; GAGE, KENNETH S.; Boundary Layer Development over a Tropical Island during the Maritime Continent Thunderstorm Experiment, 2163–2179
SCHMITZ, G.; see BECKER, E.; 462–480
SCHREMS, O.; see BEYERLE, G.; 1275–1287
SCHUBERT, WAYNE H.; see KOSSIN, JAMES P.; 2196–2209

SCHUBERT, WAYNE H.; see CIESIELSKI, PAUL E.; 2355–2376
SCHUBERT, WAYNE H.; see PRIETO, RICARDO; 2709–2728
SCHUBERT, WAYNE H.; HAUSMAN, SCOTT A.; GARCIA, MATTHEW; OOYAMA, KATSUYUKI V.; KUO, HUNG-CHI; Potential Vorticity in a Moist Atmosphere, 3148–3157
SEMENIUK, KIRILL; SHEPHERD, THEODORE G.; The Middle-Atmosphere Hadley Circulation and Equatorial Inertial Adjustment, 3077–3096
SEMENIUK, KIRILL; SHEPHERD, THEODORE G.; Mechanisms for Tropical Upwelling in the Stratosphere, 3097–3115
SHAPIRO, ALAN; see LAZARUS, STEVEN; 998–1016
SHAPIRO, M.; see PINSKY, M.; 742–764
SHAPIRO, M.; see KHAIN, A.; 2571–2595
SHAY, LYNN K.; see CHAN, JOHNNY C. L.; 154–172
SHEFTER, MICHAEL G.; see MAJDA, ANDREW J.; 896–914
SHEFTER, MICHAEL G.; see MAJDA, ANDREW J.; 1567–1584
SHEPHERD, THEODORE G.; see SEMENIUK, KIRILL; 3077–3096
SHEPHERD, THEODORE G.; see SEMENIUK, KIRILL; 3097–3115
SHERWOOD, STEVEN C.; DESSLER, ANDREW E.; A Model for Transport across the Tropical Tropopause, 765–779
SHIE, C.-L.; see TAO, W.-K.; 1328–1333
SHIGE, SHOICHI; SATOMURA, TAKEHIKO; Westward Generation of Eastward-Moving Tropical Convective Bands in TOGA COARE, 3724–3740
SHUTTS, GLENN; A Linear Model of Back-Sheared Flow over an Isolated Hill in the Presence of Rotation, 3293–3311
SIEBESMA, A. PIER; see STEVENS, BJORN; 1870–1891
SIMPSON, J.; see TAO, W.-K.; 1328–1333
SMEDMAN, ANN-SOFI; see JOHANSSON, CECILIA; 1549–1566
SMITH, ANNE K.; ORTLAND, DAVID A.; Modeling and Analysis of the Structure and Generation of the Terdiurnal Tide, 3116–3134
SMITH, G. LOUIS; see KATO, SEIJI; 3797–3803
SMITH, LEONARD A.; see GILMOUR, ISLA; 3525–3539
SMITH, ROGER K.; see ZHU, HONGYAN; 1924–1944
SMITH, SAMANTHA A.; DELGENIO, ANTHONY D.; Analysis of Aircraft, Radiosonde, and Radar Observations in Cirrus Clouds Observed during FIRE II: The Interactions between Environmental Structure, Turbulence, and Cloud Microphysical Properties, 451–461
SMOLARKIEWICZ, PIOTR; see WELCH, WENDELL T.; 1477–1492
SMOLARKIEWICZ, PIOTR K.; MARGOLIN, LEN G.; WYSZOGRODZKI, ANDRZEJ A.; A Class of Nonhydrostatic Global Models, 349–364
SNELL, HOLLY D.; see MONTGOMERY, MICHAEL T.; 421–435
SNYDER, CHRIS; see MORSS, REBECCA E.; 210–232
SOBEL, ADAM H.; NILSSON, JOHAN; POLVANI, LORENZO M.; The Weak Temperature Gradient Approximation and Balanced Tropical Moisture Waves, 3650–3665
SOLOMON, AMY; STONE, PETER H.; Equilibration in an Eddy Resolving Model with Simplified Physics, 561–574
SOLOMON, AMY; STONE, PETER H.; The Sensitivity of an Intermediate Model of the Midlatitude Troposphere's Equilibrium to Changes in Radiative Forcing, 2395–2410
SONG, MYUNG-DUK; see CHUN, HYE-YEONG; 302–319
STEPHENS, GRAEME L.; GABRIEL, PHILIP M.; PARTAIN, PHILIP T.; Parameterization of Atmospheric Radiative Transfer. Part I: Validity of Simple Models, 3391–3409
STEPHENS, GRAEME L.; see GABRIEL, PHILIP M.; 3411–3423
STEVENS, BJORN; ACKERMAN, ANDREW S.; ALBRECHT, BRUCE A.; BROWN, ANDREW R.; CHLOND, ANDREAS; CUXART, JOAN; DUYNKERKE, PETER G.; LEWELLEN, DAVID C.; MACVEAN, MALCOLM K.; NEGGERS, ROEL A. J.; SÁNCHEZ, ENRIQUE; SIEBESMA, A. PIER; STEVENS, DAVID, E.; Simulations of Trade Wind Cumuli under a Strong Inversion, 1870–1891
STEVENS, DAVID E.; see STEVENS, BJORN; 1870–1891
STONE, PETER H.; see SOLOMON, AMY; 561–574
STONE, PETER H.; see SOLOMON, AMY; 2395–2410
STRAKA, JERRY M.; see LASHER-TRAPP, SONIA G.; 3545–3562
STRÖM, LINDA; TJERNSTRÖM, MICHAEL; ROGERS, DAVID P.; Observed Dynamics of Coastal Flow at Cape Mendocino during Coastal Waves 1996, 953–977
STULL, ROLAND; see SANTOSO, EDI; 1446–1464
SUI, C.-H.; see PENG, L.; 877–895
SUN, JUANZHEN; see LIN, CHING-LONG; 1767–1783
SWANSON, K. L.; Upper-Tropospheric Potential Vorticity Fluctuations and the Dynamical Relevance of the Time Mean, 1815–1826
SWANSON, K. L.; Oscillatory Instabilites to Zonally Varying Barotropic Flows, 3135–3147
SZCZODRAK, M.; AUSTIN, P. H.; KRUMMEL, P. B.; Variability of Optical Depth and Effective Radius in Marine Stratocumulus Clouds, 2912–2926
TAGUCHI, MASAKAZU; YAMAGA, TAKASHI; YODEN, SHIGEO; Internal Variability of the Troposphere–Stratosphere Coupled System Simulated in a Simple Global Circulation Model, 3184–3203
TAKAYA, KOUTAROU; NAKAMURA, HISASHI; A Formation of a Phase-Independent Wave-Activity Flux for Stationary and Migratory Quasigeostrophic Eddies on a Zonally Varying Basic Flow, 608–627
TALAAT, ELSAYED R.; see ZHU, XUN; 2441–2454
TAO, W.-K.; see PENG, L.; 877–895
TAO, W.-K.; SHIE, C.-L.; SIMPSON, J.; *Comments on "A Sensitivity Study of Radiative–Convective Equilibrium in the Tropics with a Convection-Resolving Model," 1328–1333
TAO, WEI-KUO; see LYNN, BARRY H.; 575–592
TAO, WEI-KUO; see LYNN, BARRY H.; 593–607
THIAW, WASSILA M.; see MO, KINGTSE; 3477–3496
THOMAS, S. J.; BROWNING, G. L.; The Accuracy and Efficiency of Semi-Implicit Time Stepping for Mesoscale Storm Dynamics, 3053–3063
THOMPSON, WILLIAM T.; see KORA IN, DARKO; 1714–1731
TING, MINGFANG; WANG, HAILAN; YU, LINHAI; Nonlinear Stationary Wave Maintenance and Seasonal Cycle in the GFDL R30 GCM, 2331–2354
TJERNSTRÖM, MICHAEL; see STRÖM, LINDA; 953–977
TOMPKINS, ADRIAN M.; Organization of Tropical Convection in Low Vertical Wind Shears: The Role of Water Vapor, 529–545
TOMPKINS, ADRIAN M.; Organization of Tropical Convection in Low Vertical Wind Shears: The Role of Cold Pools, 1650–1672
TORY, K. J.; see REASON, C. J. C.; 1892–1906
TRAUTMANN, THOMAS; see KAY, M. J.; 3752–3761
TRISHCHENKO, ALEXANDER P.; see LI, ZHANQING; 376–389
TULICH, STEFAN N.; see HAERTEL, PATRICK T.; 504–516
TUNG, KA KIT; WELCH, WENDELL T.; *Remarks on Charney's Note on Geostrophic Turbulence, 2009–2012
TZIPERMAN, ELI; see SAMELSON, ROGER M.; 3613–3625
ULRICH, WOLFGANG; see ZHU, HONGYAN; 1924–1944
USTINOV, EUGENE A.; Adjoint Sensitivity Analysis of Atmospheric Dynamics: Application to the Case of Multiple Observables, 3340–3348
VADAS, SHARON L.; FRITTS, DAVID C.; Gravity Wave Radiation and Mean Responses to Local Body Forces in the Atmosphere, 2249–2279
VAILLANCOURT, P. A.; YAU, M. K.; GRABOWSKI, W. W.; Microscopic Approach to Cloud Droplet Growth by Condensation. Part I: Model Description and Results without Turbulence, 1945–1964
VALI, GABOR; see WOLDE, MENGISTU; 828–841
VALI, GABOR; see WOLDE, MENGISTU; 842–849
VAN DOP, HAN; VERVER, GÉ; *Countergradient Transport Revisited, 2240–2247
VÁRNAI, TAMÁS; MARSHAK, ALEXANDER; Statistical Analysis of the Uncertainties in Cloud Optical Depth Retrievals Caused by Three-Dimensional Radiative Effects, 1540–1548
VENEMA, V. K. C.; see ERKELENS, J. S.; 1091–1102
VERVER, GÉ; see VAN DOP, HAN; 2240–2247
VIUDEZ, ALVARO; The Relation between Beltrami's Material Vorticity and Rossby–Ertel's Potential Vorticity, 2509–2517

VOHL, O.; MITRA, S. K.; DIEHL, K.; HUBER, G.; WURZLER, S. C.; KRATZ, K. -L.; PRUPPACHER, H. R.; A Wind Tunnel Study of Turbulence Effects on the Scavenging of Aerosol Particles by Water Drops, 3064–3072
VONDER HAAR, THOMAS H.; see LARSON, VINCENT E.; 1117–1128
VONDER HAAR, THOMAS H.; see LARSON, VINCENT E.; 1978–1994
VON STORCH, JIN-SONG; *How Do Friction and Pressure Torques Affect the Relative and Angular Momenta of the Atmosphere?, 1995–1999
WALISER, DUANE E.; ZHANG, ZHENZHOU; LAU, K. M.; KIM, JAE-HOON; Interannual Sea Surface Temperature Variability and the Predictability of Tropical Intraseasonal Variability, 2596–2615
WALKO, ROBERT L.; see COSTA, ALEXANDRE A.; 253–268
WALKO, ROBERT L.; see COSTA, ALEXANDRE A.; 3357–3375
WANG, BIN; see WU, LIGUANG; 1801–1814
WANG, BIN; see WU, LIGUANG; 3639–3649
WANG, HAILAN; see TING, MINGFANG; 2331–2354
WANG, YUQING; see KEPERT, JEFF; 2485–2501
WARNER, C. D.; MCINTYRE, M. E.; An Ultrasimple Spectral Parameterization for Nonorographic Gravity Waves, 1837–1857
WARNER, THOMAS T.; see CHEN, FEI; 3204–3223
WELCH, WENDELL T.; SMOLARKIEWICZ, PIOTR; ROTUNNO, RICHARD; BOVILLE, BYRON A.; The Large-Scale Effects of Flow over Periodic Mesoscale Topography, 1477–1492
WELCH, WENDELL T.; see TUNG, KA KIT; 2009–2012
WHITEWAY, JAMES A.; see DUCK, THOMAS J.; 3581–3596
WILLIAMS, A. L.; see ROOD, M. J.; 1468–1473
WILLIAMS, R. T.; see KUO, HUNG-CHI; 1035–1050
WILLIAMS, R. T.; see KUO, HUNG-CHI; 1310–1327
WILLIAMS, R. T.; see BLUMEN, WILLIAM; 2180–2195
WILLIAMS, R. T.; see PENG, MELINDA S.; 2222–2239
WILLOUGHBY, H. E.; JONES, R. W.; Nonlinear Motion of a Barotropic Vortex in Still Air and in an Environmental Zonal Flow, 1907–1923
WILSON, R. JOHN; see HAMILTON, KEVIN; 3271–3292
WINANT, CLINTON D.; see EDWARDS, KATHLEEN A.; 1511–1528
WIRTH, VOLKMAR; Cyclone–Anticyclone Asymmetry Concerning the Height of the Thermal and the Dynamical Tropopause, 26–37
WIRTH, VOLKMAR; see HAUCK, CHRISTIAN; 1357–1370
WISCOMBE, W. J.; see GERBER, H.; 497–503
WOLDE, MENGISTU; VALI, GABOR; Polarimetric Signatures from Ice Crystals Observed at 95 GHz in Winter Clouds. Part I: Dependence on Crystal Form, 828–841
WOLDE, MENGISTU; VALI, GABOR; Polarimetric Signatures from Ice Crystals Observed at 95 GHz in Winter Clouds. Part II: Frequencies of Occurrence, 842–849
WONG, J. G. D.; see LI, J.; 193–209
WOOD, ROBERT; see LARSON, VINCENT E.; 1117–1128
WOOD, ROBERT; see LARSON, VINCENT E.; 1978–1994
WORTHINGTON, R. M.; MUSCHINSKI, A.; BALSLEY, B. B.; Bias in Mean Vertical Wind Measured by VHF Radars: Significance of Radar Location Relative to Mountains, 707–723
WU, LIGUANG; WANG, BIN; Movement and Vertical Coupling of Adiabatic Baroclinic Tropical Cyclones, 1801–1814
WU, LIGUANG; WANG, BIN; Effects of Convective Heating on Movement and Vertical Coupling of Tropical Cyclones: A Numerical Study, 3639–3649
WU, TING; see CHENG, WILLIAM Y. Y.; 1017–1034
WU, XIAOQING; see MAPES, BRIAN E.; 517–526
WU, XIAOQING; see YANO, JUN-ICHI; 850–867
WU, XIAOQING; see YANO, JUN-ICHI; 868–876
WU, XIAOQING; MONCRIEFF, MITCHELL W.; Long-Term Behavior of Cloud Systems in TOGA COARE and Their Interactions with Radiative and Surface Processes. Part III: Effects on the Energy Budget and SST, 1155–1168
WU, ZHAOHUA; SARACHIK, E. S.; BATTISTI, DAVID S.; Thermally Driven Tropical Circulations under Rayleigh Friction and Newtonian Cooling: Analytic Solutions, 724–741
WURZLER, S. C.; see VOHL, O.; 3064–3072
WYNGAARD, JOHN C.; see OTTE, MARTIN J.; 3424–3442
WYSZOGRODZKI, ANDRZEJ A.; see SMOLARKIEWICZ, PIOTR K.; 349–364
XU, KUAN-MAN; RANDALL, DAVID A.; *Reply, 1334–1338
XU, KUAN-MAN; RANDALL, DAVID A.; Updraft and Downdraft Statistics of Simulated Tropical and Midlatitude Cumulus Convection, 1630–1649
YAMADA, MICHIO; see YANO, JUN-ICHI; 850–867
YAMAGA, TAKASHI; see TAGUCHI, MASAKAZU; 3184–3203
YAMAMOTO, MASARU; Blocky Markings and Planetary-Scale Waves in the Equatorial Cloud Layer of Venus, 365–375
YAMANE, SHOZO; YODEN, SHIGEO; Finite-Time Evolution of Small Perturbations Superposed on a Chaotic Solution: Experiment with an Idealized Barotropic Model, 1066–1078
YAMAZAKI, YASUHIRO H.; PELTIER, W. R.; The Existence of Subsynoptic-Scale Baroclinic Instability and the Nonlinear Evolution of Shallow Disturbances, 675–683
YAMAZAKI, YASUHIRO H.; PELTIER, W. R.; *Baroclinic Instability in an Euler Equations-Based Column Model: The Coexistence of a Deep Synoptic-Scale Mode and Shallow Subsynoptic-Scale Modes, 780–792
YANG, ZONGJUN; see MONTGOMERY, MICHAEL T.; 421–435
YANO, JUN-ICHI; MONCRIEFF, MITCHELL W.; WU, XIAOQING; YAMADA, MICHIO; Wavelet Analysis of Simulated Tropical Convective Cloud Systems. Part I: Basic Analysis, 850–867
YANO, JUN-ICHI; MONCRIEFF, MITCHELL W.; WU, XIAOQING; Wavelet Analysis of Simulated Tropical Convective Cloud Systems. Part II: Decomposition of Convective-Scale and Mesoscale Structure, 868–876
YAU, M. K.; see VAILLANCOURT, P. A.; 1945–1964
YAU, M. K.; see CHEN, YONGSHENG; 2128–2145
YEE, JENG-HWA; see ZHU, XUN; 2441–2454
YI, CHUIXIANG; DAVIS, KENNETH J.; BERGER, BRADFORD W.; BAKWIN, PETER S.; Long-Term Observations of the Dynamics of the Continental Planetary Boundary Layer, 1288–1299
YODEN, SHIGEO; see YAMANE, SHOZO; 1066–1078
YODEN, SHIGEO; see MIZUTA, RYO; 2616–2629
YODEN, SHIGEO; see TAGUCHI, MASAKAZU; 3184–3203
YU, LINHAI; see TING, MINGFANG; 2331–2354
YUM, SEONG SOO; see HUDSON, JAMES G.; 915–926
ZAWADZKI, ISZTAR; see PROTAT, ALAIN; 1222–1248
ZEBIAK, STEPHEN E.; see CHIANG, JOHN C. H.; 1371–1394
ZEHNDER, JOSEPH A.; A Comparison of Convergence- and Surface-Flux-Based Convective Parameterizations with Applications to Tropical Cyclogenesis, 283–301
ZHANG, ZHENZHOU; see WALISER, DUANE E.; 2596–2615
ZHU, HONGYAN; SMITH, ROGER K.; ULRICH, WOLFGANG; A Minimal Three-Dimensional Tropical Cyclone Model, 1924–1944
ZHU, PING; ALBRECHT, BRUCE; GOTTSCHALCK, JON; Formation and Development of Nocturnal Boundary Layer Clouds over the Southern Great Plains, 1409–1426
ZHU, XUN; YEE, JENG-HWA; TALAAT, ELSAYED R.; Diagnosis of Dynamics and Energy Balance in the Mesosphere and Lower Thermosphere, 2441–2454
ZILITINKEVICH, S. S.; GRACHEV, A. A.; FAIRALL, C. W.; *Scaling Reasoning and Field Data on the Sea Surface Roughness Lengths for Scalars, 320–325
ZURITA, PABLO; LINDZEN, RICHARD S.; The Equilibration of Short Charney Waves: Implications for Potential Vorticity Homogenization in the Extratropical Troposphere, 3443–3462

## Section B. Subject Index


Absorption coefficient, radiative properties of midlatitude cirrus based on lidars and radiometers, 2113
Actinic flux, net flux and actinic flux, calculations in radiative transfer, 3752
Adaptive sampling strategy, idealized adaptive observations for improving numerical weather predictions, 210
Adiabatic heating, vertical coupling and movement of adiabatic baroclinic tropical cyclone, 1801
Adjoint models, retrieval of flow structures in a convective boundary layer, 1767
Adjoint sensitivity, analysis of atmospheric dynamics, multiple observables, 3340
Adjustments, hydrostatic and geostrophic adjustments in a compressible atmosphere, 3776
Advection, examination of eddy diffusivity as a mixing diagnostic, 3685
Advection–diffusion operator, analysis of zonal momentum budget in light of its average kinematics, 3328
Advection–diffusion problem, stratospheric flow, concentration probability distribution function, 1493
Advection mechanism, cell regeneration, development, and propagation in multicell storms, 2957
Aerosols
  effect on spectral UV measurements during the SUSPEN campaign, 1529
  influence of soluble surfactant properties on activation of aerosols, comment, 1465; reply, 1468
  simulation of arctic diamond dust, ice fog, and stratus in explicit model, 1199
Aerosol particles, effects of turbulence on scavenging of aerosol particles by drops, 3064
Aerosol properties, parameterization of shortwave optical properties of sulfate aerosols, 193
Aircraft wing vortices, effects of aircraft wake dynamics on contrail development, 390
Air–sea interactions
  coupled ocean–cloud-resolving simulations of air–sea interactions, 3357
  tropical cyclone intensity change from a simple ocean–atmosphere model, 154
Anelastic equations, motion, design, efficiency, and accuracy of a nonhydrostatic global model, 349
Angular momentum
  axisymmetric spindown dynamics for hurricane-like vortices, 421
  equations of total angular momentum for *f*-plane and beta-plane geometries, 2502
  simple model for transient eddy momentum fluxes in upper troposphere, 3019
Angular momentum flux
  linear theory of tropical cyclone core boundary layer jets, 2469
  nonlinear enhancement of tropical cyclone core boundary layer jets, 2485
Angular variability, liquid water cloud optical thickness from satellite data, 3007
Annual mean potential vorticity, upper-troposphere potential vorticity fluctuations and the annual mean, 1815
Anomalous surface winds, elevated heating and surface temperature gradient effects on tropical winds, 1371
Antarctica, radiative influence on the polar-night vortex, 1300
Anthropogenic nuclei, contrast in drizzle content between small maritime and tropical cumuli, 915
Aperiodic flow, mixing and transport barriers in an idealized stratosphere polar vortex, 2616
Arctic diamond dust, microphysical parameterization for climate models, 1181
Arctic diamond dust, simulation in explicit aerosol–cloud–radiation model, 1199
Asian summer monsoon, eddy shedding from the upper-tropospheric Asian monsoon anticyclone, 93
Asymmetry, cyclone–anticyclone asymmetry, height of the tropopause, 26
Atmosphere critical level, blocky markings and planetary-scale waves in the equatorial Venus clouds, 365
Atmosphere mixed layer, multiscale variability of the mixed layer over the western Pacific warm pool, 2729
Atmosphere surface layer, time and space variability of the early evening surface layer transition, 2650
Atmospheric blocks, linear stability of modons on a sphere, 2280
Atmospheric cold pools, role of cold pools in organization of tropical convection in low wind shear, 1650
Atmospheric sulfates, parameterization of shortwave optical properties of sulfate aerosols, 193
Atmospheric variability, uncertainties in shortwave radiative forcing and absorption, 376
Australian monsoon, boundary layer development over a tropical island during the summer monsoon, 2163
Autocorrelation, optimally persistent patterns in time-varying fields, 1341
Axisymmetric flow, Hadley cell dynamics in a primitive equation model, 2845
Axisymmetric mountains, modification of drag caused by partial reflections of gravity waves, 797
Axisymmetric vortices, axisymmetric spindown dynamics for hurricane-like vortices, 421
Azimuthal wavenumber 1, alignment and corotation of weak tropical vortices via linear Rossby waves, 2306
Backscatter sondes, cirrus cloud observations at Table Mountain, 1275
Back-sheared flow, linear model over an isolated hill in the presence of rotation, 3293
Balanced dynamic modes, weak temperature gradient approximation and tropical waves, 3650
Baroclinic instability
  deep and shallow modes of baroclinic instability in a column model, 780
  nonlinear stability of the generalized Eady model, 821
  remarks on Charney's note on geostrophic turbulence, 2009
  subsynoptic-scale baroclinic instability and growth of shallow disturbances, 675
Baroclinic modes, models for stratiform instability and convectively coupled waves, 1567
Baroclinic waves, periodic orbits and disturbance growth, 436
Barotropic dynamics, observations of the MJO, dynamics, and tropical cyclone formation, 2545
Barotropic flow, oscillatory instabilities to zonally varying barotropic flows, 3135
Barotropic instability
  linear stability of modons on a sphere, 2280
  zonally symmetric equilibrium states for the stratosphere polar vortex, 2709
Barotropic model, finite-time evolution of small perturbations in a chaotic solution, 1066
Barotropic modeling, stochastic modeling of the MJO, dynamics, and tropical cyclone formation, 2559
Barotropic modes, seasonal intraseasonal variability of large-scale, 50

Beta effect
nonlinear motions of a barotropic vortex in still air and in zonal flow, 1907
topographical effects on barotropic vortex motion with no mean flow, 1310
Beta-plane model, sensitivity of midlatitude troposphere equilibrium to radiative forcing, 2395
Bimodal distributions, upper-troposphere potential vorticity fluctuations and the annual mean, 1815
Blocking onset, planetary-scale preconditioning for the onset of blocking, 933
Body forcing, characteristics of gravity waves and responses to general body forces, 2249
Boundary layer
critical test of Monin–Obukhov similarity theory for convective conditions, 1549
development over a tropical island during the summer monsoon, 2163
effects of elevated wind shear and surface roughness on evolution, 546
effects on fronts passing over topography, 2222
equilibration in an eddy-resolving model with simplified physics, 561
long-term observations of the dynamics of the continental boundary layer, 1288
new third-order moments for the CBL, 1169
toward unifying parameterizations of cloud and boundary layer processes, 2021
Boundary layer clouds, development of nocturnal boundary layer clouds over the Great Plains, 1409
Boundary layer friction, axisymmetric spindown dynamics for hurricane-like vortices, 421
Boundary layer jets
linear theory of tropical cyclone core boundary layer jets, 2469
nonlinear enhancement of tropical cyclone core boundary layer jets, 2485
Boundary layer process, providing a unified framework for cumulus and boundary layer processes, 2052
Boussinesq linearization, design, efficiency, and accuracy of a nonhydrostatic global model, 349
Bow echo, evolution of a bow echo in a simulated high precipitation supercell, 1597
CAM model, parameterization of cloud overlap in general circulation models, 3224
Cane–Zebiak model, instability of the chaotic ENSO, growth-phase predictability barrier, 3613
Carbon dioxide profiles, long-term observations of the dynamics of the continental boundary layer, 1288
CCM model, parameterization of cloud overlap in general circulation models, 3224
Cell interaction, kinematics and dynamics of a shallow hailstorm sampled by Doppler radars, 1222
Cell regeneration, regeneration, development, and propagation in multicell storms, 2957
Channel fluid, wave–mean-flow interaction and Lagrangian mean circulation, 3036
Chaos, finite-time evolution of small perturbations, 1066
Chaotic mixing, mixing and transport barriers in an idealized stratosphere polar vortex, 2616
Charney waves, equilibration of short Charney waves, extratropical troposphere, 3443
Cirrus clouds
large-eddy simulations of FIRE II event, 1017
lidar and backscatter sonde measurements at Table Mountain, 1275
microphysical properties of cirrus derived from lidar depolarization, 2103
midlatitude climatology from the Facility for Atmospheric Remote Sensing, 481
radiative properties of midlatitude cirrus based on lidars and radiometers, 2113
Climate modeling, microphysical parameterization of arctic diamond dust, ice fog, and stratus, 1181
Climatological simulation, interannual SST variability and predictability of tropical variability, 2596
Clouds
aircraft, radiosonde, and radar observation in cirrus clouds, 451
algorithm to compute shortwave irradiances for cloudy atmospheres, 3797
coupled ocean–cloud-resolving simulations of air–sea interactions, 3357
droplet spectra broadening in adiabatic cores, 628
inferring optical depth of broken clouds using surface solar radiometric, 2989
long-term behavior in TOGA COARE and effects on energy budget and SST, 1155
microscale droplet concentration heterogeneities in cumulus, 642
microscopic approach to cloud droplet growth by condensation, no turbulence, 1945
midlatitude cirrus climatology from Facility for Atmospheric Remote Sensing, 481
observations of cirrus scattering phase functions, halos, 3376
parameterization of the cloudiness associated with cumulus convection, 3158
simulation of fog and stratus in explicit aerosol–cloud–radiation model, 1199
Venus sulphuric acid-water, 3597
Cloud absorption, uncertainties in shortwave radiative forcing and absorption, 376
Cloud brightness, statistical analysis of retrieved optical depth uncertainties, 1540
Cloud climatology
microphysical properties of cirrus derived from lidar depolarization, 2103
radiative properties of midlatitude cirrus based on lidars and radiometers, 2113
Cloud condensation nuclei, contrast in drizzle content between small maritime and tropical cumuli, 915
Cloud ensemble model, effect of vertical wind shear on radiative–convective equilibrium states, 1427
Cloud entrainment, coherent scattering of microwaves by particles for clouds and smoke, 1091
Cloud environment, convectively generated gravity waves and effect on the cloud environment, 2427
Cloud formation, development of nocturnal boundary layer clouds over the Great Plains, 1409
Cloud layers, dynamics of trade wind cumuli capped by a strong inversion, 1870
Cloud layer process, providing a unified framework for cumulus and boundary layer processes, 2052
Cloud liquid water, spectral density at high frequencies, 497
Cloud microphysics
contrast in drizzle content between small maritime and tropical cumuli, 915
effects of aircraft wake dynamics on contrail development, 390
laboratory measurements of small drop collisions at reduced pressure, 1395
variability of optical depth and effective radius in marine stratocumulus, 2912
Cloud microphysics chamber, ice crystal–graupel collision mechanism for thunderstorm electrification, 2751
Cloud optical depth, algorithm to compute shortwave irradiances for cloudy atmospheres, 3797

Cloud optical thickness, angular variability of liquid water cloud optical thickness, 3007
Cloud overlap, parameterization of cloud overlap in general circulation models, 3224
Cloud processes, coupling with large-scale dynamics using cloud-resolving parameterization, 978
Cloud-resolving model
convectively generated gravity waves and effect on the cloud environment, 2427
dynamic and thermodynamic foundation for modeling the moist atmosphere, 2073
momentum transports in 2D/3D cloud-resolving models with residual method, 517
numerical modeling of gravity wave generation by deep tropical convection, 1249
role of cold pools in organization of tropical convection in low wind shear, 1650
sensitivity of tropical Pacific clouds and precipitation to SST change, 253
updraft and downdraft statistics in simulated cumulus convection, 1630
Cloud turbulence, radar observations of updrafts and downdrafts in fair-weather cumulus cloud, 1750
Cloud variables, using 1D PDFs for mesoscale variability of scalars in the boundary layer, 1978
Cloudy boundary layer, using 1D PDFs for mesoscale variability of scalars in the boundary layer, 1978
Coalescence efficiency, laboratory measurements of small drop collisions at reduced pressure, 1395
Coastally trapped disturbance, model investigation of the dynamics of a, 1892
Coastal marine flow, observed dynamics of coastal flow at Cape Mendocino during disturbances, 953
Coastal stratus, observations and modeling of transition of coastal stratus into fog, 1714
Coherent microwave scattering, coherent scattering of microwaves by particles for clouds and smoke, 1091
Collision charging, ice crystal–graupel collision mechanism for thunderstorm electrification, 2751
Collision efficiency
computation of collision rate of small graupel and water droplets, 2571
effects of pressure on spectrum evolution, 742
Collision kernel, computation of collision rate of small graupel and water droplets, 2571
Comparisons, GCM and observational diagnoses of seasonal and interseasonal variations, 1784
Compressible atmosphere, hydrostatic and geostrophic adjustments, instantaneous localized heating, 3776
Computational efficiency, net flux and actinic flux, calculations in radiative transfer, 3752
Condensation, microscopic approach to cloud droplet growth by condensation, no turbulence, 1945
Condensed water effect, vapor gradient and condensed water effects–stability criterion, 2013
Conservation of vorticity, relation between Bertrami's material vorticity and Rossby–Ertel PV, 2509
Continental summer heating, origin of the subtropical anticyclones of the summer season, 1827
Contour advection, uses and limitations of contour advection for examining Arctic vortices, 2210
Contrails, effects of aircraft wake dynamics on contrail development, 390
Convection
effect of peripheral convection on tropical cyclone formation, 3463
new third-order moments for the CBL, 1169
organization of tropical convection in low vertical wind shear, 529
sensitivity of orographic convection to landscape variability, 3204
Convection organization, implications of cumulus ensembles in wind shear for parameterization, 2832
Convection-resolving model, sensitivity study of radiative–convective equilibrium in the Tropics, comment, 1328; reply, 1334
Convective boundary layer
countergradient flux and modified diffusion equation, 2240
effects of elevated wind shear and surface roughness on evolution, 546
similarity equations for wind and temperature profiles in the lower BL, 1446
turbulence structure in a horizontally developing sheared CBL, 70
Convective coupling, models for stratiform instability and convectively coupled waves, 1567
Convective eddy momentum, transports in 2D/3D cloud-resolving models with residual method, 517
Convective heating, effects on movement and vertical coupling of tropical cyclones, 3639
Convective inhibition, convectively generated gravity waves and effect on the cloud environment, 2427
Convectively coupled waves, waves and instabilities for tropical models with convective parameterization, 896
Convective organization
characteristics of complete discrete wavelet analyses of simulated convection, 850
decomposition of structures in wavelet analyses of tropical convection, 868
effect of vertical wind shear on radiative–convective equilibrium states, 1427
Convective parameterization
convergence and surface flux based parameterizations in tropical models, 283
coupling cloud processes with large-scale dynamics, 978
implications of cumulus ensembles in wind shear for parameterization, 2832
triggering of landscape-generated moist convection, 575, 593
waves and instabilities for tropical models with convective parameterization, 896
Convective potential energy, convectively generated gravity waves and effect on the cloud environment, 2427
Convective vortex, thermodynamic theory for dust devils applies to waterspouts, 927
Convective wakes, role of cold pools in organization of tropical convection in low wind shear, 1650
Convergence zones, seasonal prediction capability by monitoring Walker circulation at equator, 2146
Cool season, GCM and observational diagnoses of seasonal and interseasonal variations, 1784
Coriolis conversion, reformulation of global relative and angular momenta budgets, 1995
Coriolis parameter
effect of peripheral convection on tropical cyclone formation, 3463
equations of total angular momentum for *f*-plane and beta-plane geometries, 2502
Countergradient flux, countergradient flux and modified diffusion equation, 2240
Coupled models, coupled ocean–cloud-resolving simulations of air–sea interactions, 3357
Coupled shallow layer model, convergence- and surface flux–based parameterizations in tropical models, 283
Crystal form, polarimetric signatures of ice crystals observed at 95 GHz in winter clouds, 828
Cuboid clouds, cloud fraction from multistream radiative transfer for longwave radiation, 2455

Cumulus clouds
droplet spectra broadening in adiabatic cores, 628
microscale droplet concentration heterogeneities, 642
Cumulus convection
effects of convective-induced gravity waves on the general circulation, 302
parameterization of the cloudiness associated with, TOGA COARE data, 3158
Cumulus parameterization
Madden–Julian oscillation model with cloud–radiation interaction, 2807
rotational ITCZ attractors with quasi-equilibria at monsoon onset, 2820
Cumulus-resolving model, genesis and evolution of hierarchal clouds in a 2D cloud-resolving model, 877
Cyclogenesis, impact of sea spray evaporation in a numerical weather prediction model, 3626
Cyclone intensity, minimal 3D tropical cyclone model, 1924
Cyclonic perturbations, local confined untilted cyclonic perturbations can give rise to KE growth, 38
Cylindrical model, nonlinear motions of a barotropic vortex in still air and in zonal flow, 1907
Decorrelation time, optimally persistent patterns in time-varying fields, 1341
Deep tropical convection, models for stratiform instability and convectively coupled waves, 1567
Deformation radius, alignment and corotation of weak tropical vortices via linear Rossby waves, 2306
Diabatic circulation, effect of wave-driven circulation and wave drag on Hadley circulation, 3077
Diabatic heating effects, examination of nonlinear stationary wave maintenance and seasonal cycle, 2331
Diffusion, examination of eddy diffusivity as a mixing diagnostic, 3685
Diffusion equation, countergradient flux and modified diffusion equation, 2240
Discrete wavelets
characteristics of complete discrete wavelet analyses of simulated convection, 850
decomposition of structures in wavelet analyses of tropical convection, 868
Dispersion, internal gravity wave breaking in the middle atmosphere and influence of, 132
Disturbance growth rate, subsynoptic-scale baroclinic instability and growth of shallow disturbances, 675
Diurnal change, time and space variability of the early evening surface layer transition, 2650
Diurnal cycle
boundary layer development over a tropical island during the summer monsoon, 2163
diurnal variation of the marine boundary layer during ASTEX, 2355
long-term observations of the dynamics of the continental boundary layer, 1288
multiscale variability of the mixed layer over the western Pacific warm pool, 2729
Diurnal variations, shallow water model simulations of dryline diurnal variations, 3508
Divergence balance, hierarchies of balance conditions for the *f*-plane shallow water equations, 2411
Doppler radar
application of the Zhang–Gal-Chen velocity retrieval in deep convection, 998
kinematics and dynamics of a shallow hailstorm sampled by Doppler radars, 1222
number concentration/vertical profile/effective radius of liquid water content, 2895
Doppler wind measurements, radar observations of updrafts and downdrafts in fair-weather cumulus cloud, 1750
Drizzle, contrast in drizzle content between small maritime and tropical cumuli, 915
Drop collision efficiency, effects of pressure on spectrum evolution, 742
Drop impact, laboratory measurements of small-drop collisions at reduced pressure, 1395
Droplets, microscopic approach to cloud droplet growth by condensation, no turbulence, 1945
Droplet spectra
broadening in adiabatic cores of cumulus clouds, 628
microscale droplet concentration heterogeneities in cumulus clouds, 642
Drop size distributions
contrast in drizzle content between small maritime and tropical cumuli, 915
number concentration/vertical profile/effective radius of liquid water content, 2895
use of moments and generalized gamma functions for drop size distribution, 407
Dryline, shallow water model simulations of dryline diurnal variations, 3508
Dual-frequency radar, coherent scattering of microwaves by particles for clouds and smoke, 1091
Dust devil, thermodynamic theory for dust devils applies to waterspouts, 927
Dynamical tracers, uses and limitations of contour advection for examining Arctic vortices, 2210
Eady model
potential vorticity and wave activity diagnosis of perturbation evolution, 2518
used for investigating local perturbation evolution, 38
Eady waves, instability of neutral waves and orography, 1146
Early evening transition, time and space variability of the early evening surface layer transition, 2650
Easterly waves, convergence- and surface flux–based parameterizations in tropical models, 283
Easterly wave dynamics, weak temperature gradient approximation and tropical waves, 3650
Eastward-moving tropical waves, Madden–Julian oscillation model with cloud–radiation interaction, 2807
Eddies, equilibration in an eddy-resolving model with simplified physics, 561
Eddy diffusivities, using simple form of Prandtl model to address katabatic flows, 3349
Eddy energy budget, examination of baroclinic wave structure using reanalysis data, 1694
Eddy flux, examination of eddy diffusivity as a mixing diagnostic, 3685
Eddy heat flux, sensitivity of midlatitude troposphere equilibrium to radiative forcing, 2395
Eddy–mean interaction, observations of the MJO, dynamics, and tropical cyclone formation, 2545
Eddy momentum flux, simple model for transient fluxes in the upper troposphere, 3019
Eddy shedding, shedding from the upper-tropospheric Asian monsoon anticyclone, 93
Eddy–zonal flow, feedback in the Southern Hemisphere, 3312
Edge waves, balances asymmetries of waves on the tropopause, 237
Effective cloud fraction, cloud fraction from multistream radiative transfer for longwave radiation, 2455
Effective drop radius, variability of optical depth and effective radius in marine stratocumulus, 2912
Ekman layer, linear theory of tropical cyclone core boundary layer jets, 2469

Ekman transport, contributions of ocean and atmosphere to tropical poleward heat transport, 943
Elevated heating, surface temperature gradient effects on tropical winds, 1371
Eliassen–Palm, wave–mean-flow interaction and Lagrangian mean circulation, 3036
El Niño, determine tropospheric ozone column from TOMS spaceborne instrument, 2699
El Niño forecasts, rotational ITCZ attractors with quasi-equilibria at monsoon onset, 2820
El Niño–Southern Oscillation, instability of the chaotic ENSO, growth-phase predictability barrier, 3613
Emittance, radiative properties of midlatitude cirrus based on lidars and radiometers, 2113
Energy balance, diagnostic technique to derive dynamical/chemical tracer fields, 2441
Energy budget
  deep and shallow modes of baroclinic instability in a column model, 780
  kinetic energy spectrum and budget in a troposphere–stratosphere–mesosphere model, 329
  subsynoptic-scale baroclinic instability and growth of shallow disturbances, 675
Energy cascade, remarks on Charney's note on geostrophic turbulence, 2009
Energy cycle, wave–mean-flow interaction and Lagrangian mean circulation, 3036
Ensemble forecasts, duration of, synoptic weather forecasting, 3525
Ensemble forecasting
  finite-time evolution of small perturbations in a chaotic solution, 1066
  periodic orbits and disturbance growth for baroclinic waves, 436
ENSO, seasonal prediction capability by monitoring Walker circulation at equator, 2146
Enstrophy budget, isentropic modeling of winter 1979 stratosphere warming and recovery, 2630
Enthalpy transfer, effects of sea spray on tropical cyclone intensity, 3741
Entrainment, radar observations of updrafts and downdrafts in fair-weather cumulus cloud, 1750
Entrainment zone, turbulence structure in a horizontally developing sheared CBL, 70
Environmental humidity, ice crystal–graupel collision mechanism for thunderstorm electrification, 2751
Equatorial circulations, thermally driven under Rayleigh friction and Newtonian cooling, 724
Equatorial dynamics, Madden–Julian oscillation model with cloud–radiation interaction, 2807
Equilibrium simulation, effect of vertical wind shear on radiative–convective equilibrium states, 1427
Equilibrium states, zonally symmetric equilibrium states for the stratosphere polar vortex, 2709
Equivalent topography, thermally forced stationary waves in a quasigeostrophic system, 1585
Ertel potential vorticity, potential vorticity in a nonhydrostatic, moist, precipitating atmosphere, 3148
Evaporative cooling, impact of sea spray evaporation in a numerical weather prediction model, 3626
Extratropical stationary waves, interaction with the zonal mean circulation, 462
Eyewalls, numerical evolution of hurricane-like vortices (eyewall/irrotational flow), 2196
Fair-weather cumulus, radar observations of updrafts and downdrafts in fair-weather cumulus cloud, 1750
Feedback, eddy–zonal flow feedback in the Southern Hemisphere, 3312
Field studies
  in situ observations of cirrus scattering phase functions, 3376
  subgrid-scale heat fluxes and dissipation in atmospheric surface layer, 2673
FIRE II, large-eddy simulation of cirrus event, 1017
Flash floods, sensitivity of orographic convection to landscape variability, 3204
Floods, mechanisms for intense alpine rainfall, 1732
Floquet theory, seasonal intraseasonal variability of large-scale barotropic modes, 50
Floquet vectors, periodic orbits and disturbance growth for baroclinic waves, 436
Flow structures, retrieval of flow structures in a convective boundary layer, adjoint model, 1767
Fluid flow, low-dimensional approximation of the linear dynamics of, 2771
Fluid mechanics, relation between Bertrami's material vorticity and Rossby–Ertel PV, 2509
Fog formation, observations and modeling of transition of coastal stratus into fog, 1714
Forced Rossby waves
  origin of the subtropical anticyclones of the summer season, 1827
  saturation of topographically forced Rossby waves in a barotropic model, 2927
Forecast error growth, idealized adaptive observations for improving numerical weather predictions, 210
Forecasting, duration of, synoptic weather forecasting, 3525
Friction, reformulation of global relative and angular momenta budgets, 1995
Friction torque, dynamics associated with intraseasonal length-of-day variability, 2942
Frictional dissipation, around falling hydrometeors, comment, 1173; reply, 1178
Frictional drag, boundary layer effects on fronts passing over topography, 2222
Frictional heating, symmetric stress tensor formulation of momentum diffusion in GCMs, 269
Frontogenesis
  boundary layer effects on fronts passing over topography, 2222
  zero potential vorticity with unbalanced frontogenesis, 2180
Gamma function, use of moments and generalized gamma functions for drop size distribution, 407
General circulation models
  analysis of zonal momentum budget in light of its average kinematics, 3328
  dynamics of tropical upwelling branch of stratosphere Brewer–Dobson circulation, 3097
  effect of wave-driven circulation and wave drag on Hadley circulation, 3077
  effects of convective-induced gravity waves on the general circulation, 302
  examination of nonlinear stationary wave maintenance and seasonal cycle, 2331
  GFDL SKYHI, 3271
  parameterization of cloud overlap in general circulation models, 3224
  providing a unified framework for cumulus and boundary layer processes, 2052
  symmetric stress tensor formulation of momentum diffusion in GCMs, 269
  toward unifying parameterizations of cloud and boundary layer processes, 2021
Generalized Eady model, nonlinear stability of the generalized Eady model, 821
Geostrophic eddies, phase-independent wave activity flux, 608
Geostrophic turbulence, remarks on Charney's note on geostrophic turbulence, 2009

Graupel, ice crystal–graupel collision mechanism for thunderstorm electrification, 2751
Graupel density, computation of collision rate of small graupel and water droplets, 2571
Graupel–water drop collision, computation of collision rate of small graupel and water droplets, 2571
Gravity manifold, hierarchies of balance conditions for the *f*-plane shallow water equations, 2411
Gravity waves
3D effects in high-drag-state flows over long ridges, 1051
Arctic, 3581
blocky markings and planetary-scale waves in the equatorial Venus clouds, 365
characteristics of gravity waves and responses to general body forces, 2249
convectively generated gravity waves and effect on the cloud environment, 2427
genesis and evolution of hierarchal clouds in a 2D cloud-resolving model, 877
internal gravity wave breaking in the middle atmosphere, 132
kinetic energy spectrum and budget in a troposphere–stratosphere–mesosphere model, 329
modification of drag caused by partial reflections of gravity waves, 797
numerical modeling of gravity wave generation by deep tropical convection, 1249
numerical study of stratospheric gravity waves triggered by squall lines, 3702
stratosphere, 3581
ultrasimple spectral parameterization for nonorographic waves, 1837
westward generation of eastward-moving tropical convective bands, 3724
Gravity wave drag, effects of convective-induced gravity waves on the general circulation, 302
Green vegetation, inferring optical depth of broken clouds using surface solar radiometric, 2989
Growth-phase predictability, instability of the chaotic ENSO, growth-phase predictability barrier, 3613
Gust fronts, genesis and evolution of hierarchal clouds in a 2D cloud-resolving model, 877
Gust front updraft, cell regeneration, development, and propagation in multicell storms, 2957
Hadley cell
contributions of ocean and atmosphere to tropical poleward heat transport, 943
dynamics in a primitive equation model, axisymmetric flow, 2845; nonaxisymmetric flow, 2859
Hadley circulation
dynamics of tropical upwelling branch of stratosphere Brewer–Dobson circulation, 3097
effect of wave-driven circulation and wave drag on Hadley circulation, 3077
transport in the low-latitude tropopause zone from particle trajectories, 173
Hailstorms, kinematics and dynamics of a shallow hailstorm sampled by Doppler radars, 1222
Halogen occultation experiment, quasi-biennial and subbiennnial variation of trace constituents, 7
Halos, observations of cirrus scattering phase functions, 3376
Heat and moisture flux, diurnal variation of the marine boundary layer during ASTEX, 2355
Heat fluxes, subgrid-scale heat fluxes and dissipation in atmospheric surface layer, 2673
Heat sinks, cell regeneration, development, propagation in multicell storms, 2957
High-resolution GCM, kinetic energy spectrum and budget in a troposphere–stratosphere–mesosphere model, 329
High-resolution model, nonlinear enhancement of tropical cyclone core boundary layer jets, 2485
Hough modes, excitation of the 10- and 16-day waves, 1129
Hurricane, numerical evolution of hurricane-like vortices (eyewall/irrotational flow), 2196
Hurricane eye structure, distinct regimes in kinematic and thermodynamic structure of hurricane eyes, 1079
Hurricane motion, nonlinear motions of a barotropic vortex in still air and in zonal flow, 1907
Hurricane rainbands, effect of vertical wind shear on radiative–convective equilibrium states, 1427
Hurricane simulation, effects of sea spray on tropical cyclone intensity, 3741
Hurricane thermodynamics, distinct regimes in kinematic and thermodynamic structure of hurricane eyes, 1079
Hydraulic jump, adjustment of the marine boundary layer to effects of a coastal cape, 1511
Ice crystals, polarimetric signatures observed at 95 GHz in winter clouds, 828, 842
Ice crystal growth, effects of aircraft wake dynamics on contrail development, 390
Ice fog
microphysical parameterization for climate models, 1181
simulation in explicit aerosol–cloud–radiation model, 1199
Ice microphysics
microphysical properties of cirrus derived from lidar depolarization, 2103
model for convective and advective transport across the tropical tropopause, 765
Impaction scavenging, effects of turbulence on scavenging of aerosol particles by drops, 3064
Initial condition error, idealized adaptive observations for improving numerical weather predictions, 210
Instabilities, oscillatory instabilities to zonally varying barotropic flows, 3135
Instability
nonhydrostatic barotropic instability, nonsupercell tornadogenesis, 1965
wavenumber 1 instability and trochoidal motion of hurricane-like vortices, 3243
Intense operating periods, transfer of momentum by trapped lee waves, 3563
Interfacial layer, turbulence from large-eddy simulation, 3424
Interseasonal variability, interannual SST variability and predictability of tropical variability, 2596
Intertropical convergence zone
origin of monsoons, 3497
rotational ITCZ attractors with quasi equilibria at monsoon onset, 2820
Intraseasonal variability, interannual SST variability and predictability of tropical variability, 2596
Irradiance, effect of aerosols on spectral UV measurements during the SUSPEN campaign, 1529
Isentropic coordinates, isentropic modeling of winter 1979 stratosphere warming and recovery, 2630
Isentropic surfaces
turbulence, meridional mixing along isentropic surface in troposphere, 2377
upper-troposphere potential vorticity fluctuations and the annual mean, 1815
Isotropic 2D turbulence, remarks on Charney's note on geostrophic turbulence, 2009
Isotropic diffusivity, examination of eddy diffusivity as a mixing diagnostic, 3685

Jet separation, results of troposphere–stratosphere configuration of a unified model, 2000
Kalman filter, state estimation using a reduced order Kalman filter, 3666
Katabatic flow, using simple form of Prandtl model to address katabatic flows, 3349
Kelvin wave, model investigation of the dynamics of a coastally trapped disturbance, 1892
Kinetic energy
  local confined untilted cyclonic perturbations can give rise to KE growth, 38
  momentum transports in 2D/3D cloud-resolving models with residual method, 517
  stochastic modeling of the MJO, dynamics, and tropical cyclone formation, 2559
Kinetic energy budget, development of nocturnal boundary layer clouds over the Great Plains, 1409
Kinetic energy conversion, observations of the MJO, dynamics, and tropical cyclone formation, 2545
Kinetic energy spectrum, kinetic energy spectrum and budget in a troposphere–stratosphere–mesosphere model, 329
Landscape heterogeneities, parameterization for the triggering of landscape-generated moist convection, 575, 593
Lapse rates, vapor gradient and condensed water effects–stability criterion, 2013
Large eddy simulations
  countergradient flux and modified diffusion equation, 2240
  critical test of Monin–Obukhov similarity theory for convective conditions, 1549
  effects of aircraft wake dynamics on contrail development, 390
  FIRE II cirrus event, 1017
  new third-order moments for the CBL, 1169
  turbulence structure in a horizontally developing sheared CBL, 70
Large-scale effects, flow over mesoscale topography, 1477
Large-scale forcing, sensitivity of tropical Pacific clouds and precipitation to SST change, 253
Lateral mass exchange, parameterizing lateral entrainment and detrainment in mass-flux model, 2037
Lee waves, transfer of momentum by trapped lee waves, 3563
Length-of-day variability, friction torque dynamics associated with intraseasonal, 2942
Lidar, cirrus cloud observations at Table Mountain, 1275
Lidar depolarization, microphysical properties of cirrus derived from lidar depolarization, 2103
Linear dynamics, low-dimensional approximation of the linear dynamics of fluid flow, 2771
Linear models, diagnosing the impact of planetary wave breaking in a linear model, 1357
Linear regime, duration of, synoptic weather forecasting, 3525
Linear Rossby waves, alignment and corotation of weak tropical vortices via linear Rossby waves, 2306
Linearized solutions, back-sheared flow model over an isolated hill in the presence of rotation, 3293
Liquid water content
  number concentration/vertical profile/effective radius of liquid water content, 2895
  spectral density at high frequencies, 497
Localized heating, hydrostatic and geostrophic adjustments in a compressible atmosphere, 3776
Longwave cutoff, nonlinear stability of the generalized Eady model, 821
Longwave radiation, cloud fraction from multistream radiative transfer for longwave radiation, 2455
Lyapunov vectors, finite-time evolution of small perturbations in a chaotic solution, 1066
Madden–Julian oscillation
  model with cloud–radiation interaction, 2807
  observations of the MJO, dynamics, and tropical cyclone formation, 2545
  stochastic modeling of the MJO, dynamics, and tropical cyclone formation, 2559
Marine boundary layer
  adjustment of the marine boundary layer to effects of a coastal cape, 1511
  algorithm to compute shortwave irradiance for cloudy atmospheres, 3797
  diurnal variation of the marine boundary layer during ASTEX, 2355
  observations and modeling of transition of coastal stratus into fog, 1714
Marine low clouds, diurnal variation of the marine boundary layer during ASTEX, 2355
Marine stratocumulus, variability of optical depth and effective radius in marine stratocumulus, 2912
Maritime boundary layer, impact of sea spray evaporation in a numerical weather prediction model, 3626
Mass-flux model
  dynamics of trade wind cumuli capped by a strong inversion, 1870
  parameterizing lateral entrainment and detrainment in mass-flux model, 2037
  toward unifying parameterizations of cloud and boundary layer processes, 2021
Mass transports, reformulation of global relative and angular momenta budgets, 1995
Material vorticity, relation between Bertrami's material vorticity and Rossby–Ertel PV, 2509
Matrix approach, analysis of atmospheric dynamics, multiple observables, 3340
Maximum entropy, zonally symmetric equilibrium states for the stratosphere polar vortex, 2709
Mesoscale
  accuracy and efficiency of semi-implicit time stepping, storm dynamics, 3053
  topography effects, 1477
Mesoscale circulations, parameterization for the triggering of landscape-generated moist convection, 575, 593
Mesoscale cloud patterns, adjustment of the marine boundary layer to effects of a coastal cape, 1511
Mesoscale dynamics, kinematics and dynamics of a shallow hailstorm sampled by Doppler radars, 1222
Mesoscale modeling, sensitivity of orographic convection to landscape variability, 3204
Mesoscale perturbations, observed dynamics of coastal flow at Cape Mendocino during disturbances, 953
Mesosphere
  diagnostic technique to derive dynamical/chemical tracer fields, 2441
  seasonal amplification of the 2-day wave: normal mode and instability, 1858
Mesovortices, numerical evolution of hurricane-like vortices (eyewall/irrotational flow), 2196
Microphysics
  collision efficiency of drops in a wide range of Reynolds numbers, 742
  large-eddy simulations of FIRE II cirrus case, 1017
  systematic biases in numerical models that ignore subgrid-scale variability, 1117
Microphysical parameterization, Arctic diamond dust, ice fog, and thin stratus for climate models, 1181
Microphysical processes, frictional dissipation around falling hydrometeors, comment, 1173; reply, 1178

Microphysical properties, aircraft, radiosonde, and radar observation in cirrus clouds, 451
Middle atmosphere
dynamics of tropical upwelling branch of stratosphere Brewer–Dobson circulation, 3097
effect of wave-driven circulation and wave drag on Hadley circulation, 3077
Midlatitude convection, updraft and downdraft statistics in simulated cumulus convection, 1630
Midlatitude jet, eddy–zonal flow feedback in the Southern Hemisphere, 3312
Midtropospheric blocking, planetary-scale preconditioning for the onset of blocking, 933
Migratory QG eddies, phase-independent wave-activity flux, 608
Millimeter radar, observations of updrafts and downdrafts in fair-weather cumulus cloud, 1750
Minimum enstrophy, zonally symmetric equilibrium states for the stratosphere polar vortex, 2709
Modeling
cyclone–anticyclone asymmetry, height of the tropopause, 26
Hadley cell dynamics in a primitive equation model, axisymmetric flow, 2845; nonaxisymmetric flow, 2859
model investigation of the dynamics of a coastally trapped disturbance, 1892
results of troposphere–stratosphere configuration of a unified model, 2000
retrieval of flow structures in a convective boundary layer, adjoint model, 1767
theory for forcing and dissipation in stochastic turbulence models, 3762
Model-simulated convection, decomposition of structures in wavelet analyses of tropical convection, 868
Modons, linear stability of modons on a sphere, 2280
Moist atmosphere, dynamic and thermodynamic foundation for modeling the moist atmosphere, 2073
Moist convection, toward unifying parameterizations of cloud and boundary layer processes, 2021
Moist Kelvin waves, waves and instabilities for tropical models with convective parameterization, 896
Moisture flux, convergence and surface flux based parameterizations in tropical models, 283
Moisture profile, model for convective and advective transport across the tropical tropopause, 765
Moisture transport, model for convective and advective transport across the tropical tropopause, 765
Momentum budget
budget estimates of convective momentum transport over the tropical Pacific, 1673
observed dynamics of coastal flow at Cape Mendocino during disturbances, 953
Momentum diffusion, symmetric stress tensor formulation of momentum diffusion in GCMs, 269
Momentum flux
critical test of Monin–Obukhov similarity theory for convective conditions, 1549
numerical modeling of gravity wave generation by deep tropical convection, 1249
simple model for transient eddy fluxes in upper troposphere, 3019
Momentum mixing, shallow water model simulations of dryline diurnal variations, 3508
Momentum transfer
effects of sea spray on tropical cyclone intensity, 3741
trapped lee waves, 3563
Momentum transport
budget estimates of convective momentum transport over the tropical Pacific, 1673
implications of cumulus ensembles in wind shear for parameterization, 2832
Monin–Obukhov similarity, critical test of Monin–Obukhov similarity theory for convective conditions, 1549
Monsoons, origin of monsoons, 3497
Monsoon circulations, Rossby waves in zonally opposing mean flow: behavior in NW Pacific monsoon, 1035
Monsoon onset, rotational ITCZ attractors with quasi equilibria at monsoon onset, 2820
Mountain waves, 3D effects in high-drag-state flows over long ridges, 1051
Mountain weather, mechanisms for intense alpine rainfall, 1732
Mountain winds, bias in mean vertical wind measured by VHF radars, 707
Multiple observables, analysis of atmospheric dynamics, multiple observables, 3340
Nested modeling, dynamic and thermodynamic foundation for modeling the moist atmosphere, 2073
Net flux, net flux and actinic flux, calculations in radiative transfer, 3752
Newtonian cooling, thermally driven tropical circulations, 724
Nocturnal boundary layer, development of nocturnal boundary layer clouds over the Great Plains, 1409
Nocturnal inversion, long-term observations of the dynamics of the continental boundary layer, 1288
Nonaxisymmetric flow, Hadley cell dynamics in a primitive equation model, 2859
Nonhydrostatic global models, design, efficiency, and accuracy of a nonhydrostatic global model, 349
Nonlinear saturation, saturation of topographically forced Rossby waves in a barotropic model, 2927
Nonlinear stability criterion, nonlinear stability of the generalized Eady model, 821
Nonlinearity, examination of nonlinear stationary wave maintenance and seasonal cycle, 2331
Nonlocal behavior, countergradient flux and modified diffusion equation, 2240
Nonspherical earth, equations of total angular momentum for *f*-plane and beta-plane geometries, 2502
Normal-mode inversion, hierarchies of balance conditions for the *f*-plane shallow water equations, 2411
Numerical methods, coupling cloud processes with large-scale dynamics in convective scheme, 978
Numerical modeling
framework using a simple shallow water primitive equation, 685
numerical evolution of hurricane-like vortices (eyewall/irrotational flow), 2196
systematic biases in microphysics and thermodynamics, 1117
Numerical simulations, internal gravity wave breaking in the middle atmosphere, 132
Numerical studies
effects convective heating on movement and vertical coupling of cyclones, 3639
stratospheric gravity waves triggered by squall lines, tropical experiments, 3702
Numerical weather prediction
idealized adaptive observations for improving numerical weather predictions, 210
impact of sea spray evaporation in a numerical weather prediction model, 3626
need for including dissipative energy in models for, 3793
ultrasimple spectral parameterization for nonorographic gravity waves, 1837
Objective analyses, budget estimates of convective momentum transport over the tropical Pacific, 1673
Ocean–atmosphere models, contributions of ocean and atmosphere to tropical poleward heat transport, 943

Ocean sea spray, impact of sea spray evaporation in a numerical weather prediction model, 3626
Optical depth
radiative properties of midlatitude cirrus based on lidars and radiometers, 2113
statistical analysis of retrieved optical depth uncertainties, 1540
variability of optical depth and effective radius in marine stratocumulus, 2912
Optimal perturbations
determine 3D perturbations that produce optimal energy growth in shear flow, 2790
potential vorticity and wave activity diagnosis of perturbation evolution, 2518
Optimum persistence patterns, optimally persistent patterns in time-varying fields, 1341
Orographic convection, sensitivity to landscape variability, 3204
Orographic effects, 3D effects in high-drag-state flows over long ridges, 1051
Orographic flows, design, efficiency and accuracy of a nonhydrostatic global model, 349
Orographic forcing, examination of nonlinear stationary wave maintenance and seasonal cycle, 2331
Orographic waves, instability of neutral Eady waves, 1146
Oscillating updraft, numerical modeling of gravity wave generation by deep tropical convection, 1249
Outflow, simple simulations of thunderstorm outflows, 504
Overshooting convection, model for convective and advective transport across the tropical tropopause, 765
Ozone
comparison of total column ozone values from various observation platforms, 1103
determine tropospheric ozone column from TOMS space borne instrument, 2699
Pacific storm track, GCM and observational diagnoses of seasonal and interseasonal variations, 1784
Packet dispersion, examination of baroclinic wave structure using reanalysis data, 1694
Parameterizations
coupling cloud processes with large scale dynamics, 978
triggering of landscape-generated moist convection, 575, 593
ultrasimple spectral parameterization for nonorographic gravity waves, 1837
Parameterization schemes, systematic biases in numerical models that ignore subgrid-scale variability, 1117
Parameterized microphysics, dynamic and thermodynamic foundation for modeling the moist atmosphere, 2073
Particle fluctuations, coherent scattering of microwaves by particles for clouds and smoke, 1091
Particle trajectories, transport in the low-latitude tropopause zone from particle trajectories, 173
Passive tracers, advection–diffusion, concentration probability distribution function, 1493
Perturbation growth, potential vorticity and wave activity diagnosis of perturbation evolution, 2518
Planetary boundary layer
determine 3D perturbations that produce optimal energy growth in shear flow, 2790
dynamics of trade wind cumuli capped by a strong inversion, 1870
effects of elevated wind shear and surface roughness on evolution, 546
providing a unified framework for cumulus and boundary layer processes, 2052
Planetary waves
blocky markings and planetary-scale waves in the equatorial Venus clouds, 365
diagnosing the impact of planetary wave breaking in a linear model, 1357
internal variability of the troposphere–stratosphere coupled system, 3184
isentropic modeling of winter 1979 stratosphere warming and recovery, 2630
meridional localization in stochastic zonal flows, 808
mixing and transport barriers in an idealized stratosphere polar vortex, 2616
origin of the subtropical anticyclones of the summer season, 1827
planetary-scale preconditioning for the onset of blocking, 933
results of troposphere–stratosphere configuration of a unified model, 2006
seasonal amplification of the 2-day wave: normal mode and instability, 1858
simple model for transient eddy momentum fluxes in upper troposphere, 3019
thermally forced stationary waves in a quasigeostrophic system, 1585
wave propagation characteristics affect on vertical structure of planetary waves, 2872
Plane waves, determine 3D perturbations that produce optimal energy growth in shear flow, 2790
Plume-based atmospheric GCM, parameterizing lateral entrainment and detrainment in mass-flux model, 2037
Plume equations, providing a unified framework for cumulus and boundary layer processes, 2052
Polarimetric radar, signatures of ice crystals observed at 95 GHz in winter clouds, 828, 842
Polar-night vortex, radiative influence of Antarctica, 1300
Potential enstrophy, saturation of topographically forced Rossby waves in a barotropic model, 2927
Potential temperature anomaly, potential vorticity and wave activity diagnosis of perturbation evolution, 2518
Potential vorticity
equilibration of short Charney waves, homogenization in the troposphere, 3443
initial large growth of KE due to PV unshielding, 38
nonhydrostatic, moist, precipitating atmosphere, 3148
uses and limitations of contour advection for examining Arctic vortices, 2210
verification of vortex Rossby waves in spiral bands of a simulated hurricane, 2128
zero potential vorticity with unbalanced frontogenesis, 2180
Potential vorticity anomalies, vertical coupling and movement of adiabatic baroclinic tropical cyclone, 1801
Potential vorticity density, relation between Bertrami's material vorticity and Rossby–Ertel PV, 2509
Potential vorticity gradient, sensitivity of midlatitude troposphere equilibrium to radiative forcing, 2395
Potential vorticity pools, upper-troposphere potential vorticity fluctuations and the annual mean, 1815
Potential vorticity transport, planetary-scale preconditioning for the onset of blocking, 933
Power-law growth, turbulence, meridional mixing along isentropic surface in the troposphere, 2377
Prandtl model, using simple form of Prandtl model to address katabatic flows, 3349
Precipitation
collision efficiency of drops in a wide range of Reynolds numbers, 742
frictional dissipation around falling hydrometeors, comment, 1173; reply, 1178
mechanisms for intense alpine rainfall, 1732
potential vorticity in a nonhydrostatic, moist, precipitating atmosphere, 3148

seasonal prediction capability by monitoring Walker circulation at equator, 2146
thermodynamics of eastern Mediterranean rainfall variability, 87
Precipitation processes
droplet spectra broadening in adiabatic cores, 628
microscale droplet concentration heterogeneities in cumulus clouds, 642
Predictability, interannual SST variability and predictability of tropical variability, 2596
Pressure torques, reformulation of global relative and angular momenta budgets, 1995
Primitive equations, balances asymmetries of waves on the tropopause, 237
Primitive equation model, elevated heating and surface temperature gradient effects on tropical winds, 1371
Probability density function, using 1D PDFs for mesoscale variability of scalars in the boundary layer, 1978
Prognostic equations, equations of total angular momentum for *f*-plane and beta-plane geometries, 2502
Quasi-biennial oscillation, simulation, 3271
Quasigeostrophic dynamics, equilibration in an eddy-resolving model with simplified physics, 561
Quasigeostrophic eddies, phase-independent wave activity flux, 608
Quasigeostrophic flow
nonlinear stability of the generalized Eady model, 821
thermally forced stationary waves in a quasigeostrophic system, 1585
Quasigeostrophic modeling, wave properties and characteristics affect on vertical structure of planetary waves, 2872
Quasigeostrophic theory, instability of neutral Eady waves and orography, 1146
Quasigeostrophy, balances asymmetries of waves on the tropopause, 237
Radars
application of the Zhang–Gal-Chen velocity retrieval in deep convection, 998
bias in mean vertical wind measured by VHF radars, 707
early radar echoes in a cumulus congestus, ultragiant aerosol, 3545
Radar observations, polarimetric signatures of ice crystals observed at 95 GHz in winter clouds, 828, 842
Radar reflectivity
number concentration/vertical profile/effective radius of liquid water content, 2895
use of moments and generalized gamma functions for drop size distribution, 407
Radiation
effect of aerosols on spectral UV measurements during the SUSPEN campaign, 1529
influence of Antarctica on the polar-night vortex, 1300
long-term behavior and effects of cloud systems in TOGA COARE, 1155
Radiation budget
development of nocturnal boundary layer clouds over the Great Plains, 1409
observations and modeling of transition of coastal stratus into fog, 1714
sensitivity of tropical Pacific clouds and precipitation to SST change, 253
uncertainties in shortwave radiative forcing and absorption, 376
Radiation measurements, uncertainties in shortwave radiative forcing and absorption, 376
Radiation transfer, parameterization, selection rules, 3411
Radiative–convective equilibrium, sensitivity study of radiative–convective equilibrium in the Tropics, comment, 1328; reply, 1334
Radiative forcing
parameterization of shortwave optical properties of sulfate aerosols, 193
sensitivity of midlatitude troposphere equilibrium to radiative forcing, 2395
uncertainties in shortwave radiative forcing and absorption, 376
Radiative transfer
2-stream method, 3391
cloud fraction from multistream radiative transfer for longwave radiation, 2455
parameterization of cloud overlap in general circulation models, 3224
parameterization of shortwave optical properties of sulfate aerosols, 193
simple model validity, 3391
statistical analysis of retrieved optical depth uncertainties, 1540
Radiative transfer modeling
constant-hemispheric 2-stream method, 3391
Delta-Eddington 2-stream method, 3391
Radiometric measurements, inferring optical depth of broken clouds using surface solar radiometric, 2989
Radix layer, similarity equations for wind and temperature profiles in the lower BL, 1446
Rain cells, use of moments and generalized gamma functions for drop size distribution, 407
Raindrop growth, laboratory measurements of small drop collisions at reduced pressure, 1395
Rainfall rate, use of moments and generalized gamma functions for drop size distribution, 407
Rayleigh friction, thermally driven tropical circulations, 724
Reduced models, low-dimensional approximation of the linear dynamics of fluid flow, 2771
Reduced-order approximation, state estimation using a reduced-order Kalman filter, 3666
Reflecting surfaces, wave propagation characteristics effect on vertical structure of planetary waves, 2872
Reflectivity factor, coherent scattering of microwaves by particles for clouds and smoke, 1091
Relative humidity, effect of peripheral convection on tropical cyclone formation, 3463
Relative humidity effects, parameterization of shortwave optical properties of sulfate aerosols, 193
Remote sensing
determine tropospheric ozone column from TOMS spaceborne instrument, 2699
global distribution of time-averaged wing stress curl from NASCAT, 109
microphysical properties of cirrus derived from lidar depolarization, 2103
midlatitude cirrus climatology from Facility for Atmospheric Remote Sensing, 481
model calculation of presence and seasonal variability of terdiurnal tide, 3116
Retrieval, application of the Zhang–Gal-Chen velocity retrieval in deep convection, 998
Richardson numbers, determine 3D perturbations that produce optimal energy growth in shear flow, 2790
Rossby–gravity mode, seasonal amplification of the 2-day wave: normal mode and instability, 1858
Rossby–gravity waves, waves and instabilities for tropical models with convective parameterization, 896
Rossby manifold, hierarchies of balance conditions for the *f*-plane shallow water equations, 2411
Rossby number, zero potential vorticity with unbalanced frontogenesis, 2180
Rossby waves
behavior in northwest pacific monsoon in zonally opposing mean flow, 1035
diagnosing the impact of planetary wave breaking in a linear model, 1357

framework using a simple shallow water primitive equation, 685
linear stability of modons on a sphere, 2280
oscillatory instabilities to zonally varying barotropic flows, 3135
phase-independent wave-activity flux, 608
verification of vortex Rossby waves in spiral bands of a simulated hurricane, 2128
Rotational attractors, rotational ITCZ attractors with quasi-equilibria at monsoon onset, 2820
Satellite data, angular variability of liquid water cloud optical thickness from, 3007
Satellite observations, comparison of total column ozone values from various observation platforms, 1103
Satellite retrievals
statistical analysis of retrieved optical depth uncertainties, 1540
variability of optical depth and effective radius in marine stratocumulus, 2912
Satellite wind retrieval, global distribution of time-averaged wing stress curl from NASCAT, 109
Saturated atmosphere, vapor gradient and condensed water effects–stability criterion, 2013
Scan-angle method, determine tropospheric ozone column from TOMS space borne instrument, 2699
Scatterometer, global distribution of time-averaged wing stress curl from NASCAT, 109
Sea spray, effects of sea spray on tropical cyclone intensity, 3741
Sea surface roughness lengths, scaling reasoning and field data for scalars, 320
Sea surface temperature
anomalies: impact on tropical storms, 3477; impact on West African rainfall, 3477
interannual SST variability and predictability of tropical variability, 2596
origin of monsoons, 3497
sensitivity of tropical Pacific clouds and precipitation to SST change, 253
tropical cyclone intensity change from a simple ocean–atmosphere model, 154
Self-focusing effect, examination of baroclinic wave structure using reanalysis data, 1694
Semitransparent clouds, cloud fraction from multistream radiative transfer for longwave radiation, 2455
Severe storms
evolution of a bow echo in a simulated high precipitation supercell, 1597
shallow water model simulations of dryline diurnal variations, 3508
Severe weather, nonhydrostatic barotropic instability, nonsupercell tornadogenesis, 1965
Shallow mode perturbations
deep and shallow modes of baroclinic instability in a column model, 780
subsynoptic-scale baroclinic instability and growth of shallow disturbances, 675
Shallow water equations
equations of total angular momentum for *f*-plane and beta-plane geometries, 2502
hierarchies of balance conditions for the *f*-plane shallow water equations, 2411
Shallow water model
adjustment of the marine boundary layer to effects of a coastal cape, 1511
excitation of the 10- and 16-day waves, 1129
simulations of dryline diurnal variations, 3508
Shear flow, determine 3D perturbations that produce optimal energy growth in shear flow, 2790
Simulated convection
characteristics of complete discrete wavelet analyses of simulated convection, 850
dynamic and thermodynamic foundation for modeling the moist atmosphere, 2073
Simulated fronts
boundary layer effects on fronts passing over topography, 2222
zero potential vorticity with unbalanced frontogenesis, 2180
Simulated hurricane, verification of vortex Rossby waves in spiral bands of a simulated hurricane, 2128
Simulation
simple simulations of thunderstorm outflows, 504
stably stratified interfacial-layer turbulence from large-eddy simulation, 3424
Simulation of supercells, evolution of a bow echo in a simulated high precipitation supercell, 1597
Singular vector evolution, potential vorticity and wave activity diagnosis of perturbation evolution, 2518
Size regimes, early radar echoes in a cumulus congestus, ultragiant aerosol, 3545
SKYHI, simulating QBO, 3271
Small-drop collisions, laboratory measurements of small- drop collisions at reduced pressure, 1395
Small-scale turbulence, symmetric stress tensor formulation of momentum diffusion in GCMs, 269
Solar heating, model calculation of presence and seasonal variability of terdiurnal tide, 3116
Solar irradiance, algorithm to compute shortwave irradiances for cloudy atmospheres, 3797
Soluble surfactants,influence of soluble surfactant properties on activation of aerosols, comment, 1465; reply, 1468
Specific water content, using 1D PDFs for mesoscale variability of scalars in the boundary layer, 1978
Spectral density, cloud liquid water content at high frequencies, 497
Spectral techniques, ultrasimple parameterization for nonorographic gravity waves, 1837
Spectral truncation, global distribution of time-averaged wing stress curl from NASCAT, 109
Spectrometer, determine tropospheric ozone column from TOMS space borne instrument, 2699
Spiral bands, verification of vortex Rossby waves in spiral bands of a simulated hurricane, 2128
SST, effects of long-term behavior of cloud systems in TOGA COARE, 1155
SST anomalies, seasonal prediction capability by monitoring Walker circulation at equator, 2146
Stable boundary layer, using simple form of Prandtl model to address katabatic flows, 3349
Stable stratification, interfacial-layer turbulence from large-eddy simulation, 3424
State estimation, using a reduced-order Kalman filter, 3666
Static stability, contributions of ocean and atmosphere to tropical poleward heat transport, 943
Stationary QG eddies, phase-independent wave-activity flux, 608
Stationary waves
examination of nonlinear stationary wave maintenance and seasonal cycle, 2331
interaction with the zonal mean circulation, 462
Stochastic models, theory for forcing and dissipation in stochastic turbulence models, 3762
Storms, modeling viscous dissipation of turbulent kinetic energy in, 3793
Storm dynamics, accuracy and efficiency of semi-implicit time stepping, mesoscale, 3053
Stratosphere
radiative influence of Antarctica on the polar-night vortex, 1300

results of troposphere–stratosphere configuration of a unified model, 2000
Stratosphere dynamics, diagnosing the impact of planetary wave breaking in a linear model, 1357
Stratosphere mixing, examination of eddy diffusivity as a mixing diagnostic, 3685
Stratosphere polar vortex
mixing and transport barriers in an idealized stratosphere polar vortex, 2616
zonally symmetric equilibrium states for the stratosphere polar vortex, 2709
Stratosphere water vapor, transport in the low-latitude tropopause zone from particle trajectories, 173
Stratospheric coupling, internal variability of the troposphere–stratosphere coupled system, 3184
Stratospheric flow, advection–diffusion, concentration probability distribution function, 1493
Stratospheric mixing, uses and limitations of contour advection for examining Arctic vortices, 2210
Stratus clouds
number concentration/vertical profile/effective radius of liquid water content, 2895
simulation in explicit aerosol–cloud–radiation model, 1199
thin, microphysical parameterization for climate models, 1181
Stress tensor, symmetric stress tensor formulation of momentum diffusion in GCMs, 269
Subgrid-scale processes
systematic biases in microphysics and thermodynamics in numerical models, 1117
using 1D PDFs for mesoscale variability of scalars in the boundary layer, 1978
Subgrid-scale schemes, minimal 3D tropical cyclone model, 1924
Subplume-scale fluxes, parameterizing lateral entrainment and detrainment in mass-flux model, 2037
Subsynoptic instability
deep and shallow modes of baroclinic instability in a column model, 780
subsynoptic-scale baroclinic instability and growth of shallow disturbances, 675
Subtropical anticyclones, origin of the subtropical anticyclones of the summer season, 1827
Sudden warming recovery, isentropic modeling of winter 1979 stratosphere warming and recovery, 2630
Supercell evolution, evolution of a bow echo in a simulated high precipitation supercell, 1597
Super cloud clusters, genesis and evolution of hierarchal clouds in a 2D cloud-resolving model, 877
Supercritical flow, observed dynamics of coastal flow at Cape Mendocino during disturbances, 953
Supercritical wind
linear theory of tropical cyclone core boundary layer jets, 2469
nonlinear enhancement of tropical cyclone core boundary layer jets, 2485
Surface heat flux, tropical cyclone intensity change from a simple ocean–atmosphere model, 154
Surface heterogeneity, time and space variability of the early evening surface layer transition, 2650
Surface layer
need for including viscous dissipation in modeling of, 3793
subgrid-scale heat fluxes and dissipation in atmospheric surface layer, 2673
Surface pressure drag, modification of drag caused by partial reflections of gravity waves, 797
Surface roughness, effects on evolving convective boundary layer, 546
Surface temperature gradients, elevated heating and surface temperature gradient effects on tropical winds, 1371
Teleconnections, meridional localization of planetary waves in stochastic flows, 808
Temperature profiles, similarity equations for wind and temperature profiles in the lower BL, 1446
Terdiurnal tide, model calculation of presence and seasonal variability of terdiurnal tide, 3116
Terminal velocity, computation of collision rate of small graupel and water droplets, 2571
Terrain blocking, observed dynamics of coastal flow at Cape Mendocino during disturbances, 953
Terrain variability, similarity equations for wind and temperature profiles in the lower BL, 1446
Thermal buoyancy, updraft and downdraft statistics in simulated cumulus convection, 1630
Thermally driven circulations, analytic solutions with Rayleigh friction and Newtonian cooling, 724
Thermally forced waves, thermally forced stationary waves in a quasigeostrophic system, 1585
Thermodynamics, systematic biases in numerical models that ignore subgrid-scale variability, 1117
Thermosphere, diagnostic technique to derive dynamical/chemical tracer fields, 2441
3D clouds, statistical analysis of retrieved optical depth uncertainties, 1540
Three-dimensionalization, internal gravity wave breaking in the middle atmosphere and influence of, 132
Three-level model, minimal 3D tropical cyclone model, 1924
Thunderstorms, simple simulations of outflows, 504
Thunderstorm electrification, ice crystal–graupel collision mechanism for thunderstorm electrification, 2751
Thunderstorm outflow, boundary layer development over a tropical island during the summer monsoon, 2163
Tidal theory, model calculation of presence and seasonal variability of terdiurnal tide, 3116
Tides, excitation of the 10- and 16-day waves, 1129
Time series, optimally persistent patterns in time-varying fields, 1341
Time stepping, accuracy and efficiency of semi-implicit time stepping, storm dynamics, 3053
TOGA COARE
long-term behavior of cloud systems: effects on energy budget and SST, 1155
numerical study of stratospheric gravity waves triggered by squall lines, 3702
parameterization of the cloudiness associated with cumulus convection, 3158
westward generation of eastward-moving tropical convective bands, 3724
TOMS, comparison of total column ozone values from various observation platforms, 1103
Topographic effects
adjustment of the marine boundary layer to effects of a coastal cape, 1511
topographical effects on barotropic vortex motion with no mean flow, 1310
Topographic flows, 3D effects in high-drag-state flows over long ridges, 1051
Topographic forcing
boundary layer effects on fronts passing over topography, 2222
internal variability of the troposphere–stratosphere coupled system, 3184
Topography, periodic mesoscale, 1477
Tornadogenesis
evolution of a bow echo in a simulated high precipitation supercell, 1597
nonhydrostatic barotropic instability, nonsupercell tornadogenesis, 1965

TOVs, comparison of total column ozone values from various observation platforms, 1103
Trace constituents, quasi-biennial and subbiennnial variation of stratospheric, 7
Trade wind cumuli, dynamics of trade wind cumuli capped by a strong inversion, 1870
Transport barriers, mixing and transport barriers in an idealized stratosphere polar vortex, 2616
Transport velocity, analysis of zonal momentum budget in light of its average kinematics, 3328
Trochoidal motion, wavenumber 1 instability and trochoidal motion of hurricane-like vortices, 3243
Tropical atmosphere waves, the weak temperature gradient approximation and tropical waves, 3650
Tropical circulations
  elevated heating and surface temperature gradient effects on tropical winds, 1371
  thermally driven under Rayleigh friction and Newtonian cooling, 724
Tropical cloud clusters, genesis and evolution of hierarchal clouds in a 2D cloud-resolving model, 877
Tropical convection
  boundary layer development over a tropical island during the summer monsoon, 2163
  budget estimates of convective momentum transport over the tropical Pacific, 1673
  characteristics of complete discrete wavelet analyses of simulated convection, 850
  decomposition of structures in wavelet analyses of tropical convection, 868
  effects of convective-induced gravity waves on the general circulation, 302
  Madden–Julian oscillation model with cloud–radiation interaction, 2807
  numerical modeling of gravity wave generation by deep tropical convection, 1249
  organization in low vertical wind shears: role of water vapor, 529
  role of cold pools in organization of tropical convection in low wind shear, 1650
  sensitivity study of radiative–convective equilibrium in the Tropics, comment, 1328; reply, 1334
  transport in the low-latitude tropopause zone from particle trajectories, 173
  updraft and downdraft statistics in simulated cumulus convection, 1630
Tropical convective bands, westward generation of eastward-moving, TOGA COARE, 3724
Tropical cumulus, implications of cumulus ensembles in wind shear for parameterization, 2832
Tropical cyclogenesis
  convergence and surface flux based parameterizations in tropical models, 283
  framework using a simple shallow water primitive equation, 685
Tropical cyclones
  effect of peripheral convection on tropical cyclone formation, 3463
  effects of convective heating on movement and vertical coupling of, 3639
  effects of sea spray on tropical cyclone intensity, 3741
  linear theory of tropical cyclone core boundary layer jets, 2469
  nonlinear enhancement of tropical cyclone core boundary layer jets, 2485
  topographical effects on barotropic vortex motion with no mean flow, 1310
  tropical cyclone intensity change from a simple ocean–atmosphere model, 154
  vertical coupling and movement of adiabatic baroclinic tropical cyclone, 1801
Tropical cyclone formation
  observations of the MJO, dynamics, and tropical cyclone formation, 2545
  stochastic modeling of the MJO, dynamics, and tropical cyclone formation, 2559
Tropical cyclone genesis, alignment and corotation of weak tropical vortices via linear Rossby waves, 2306
Tropical cyclone model, minimal 3D tropical cyclone model, 1924
Tropical disturbances, Rossby waves in zonally opposing mean flow: behavior in NW Pacific monsoon, 1035
Tropical heat flux, contributions of ocean and atmosphere to tropical poleward heat transport, 943
Tropical models, waves and instabilities for tropical models with convective parameterization, 896
Tropical moisture gradient, the weak temperature gradient approximation and tropical waves, 3650
Tropical storms
  axisymmetric spindown dynamics for hurricane-like vortices, 421
  distinct regimes in kinematic and thermodynamic structure of hurricane eyes, 1079
  nonlinear motions of a barotropic vortex in still air and in zonal flow, 1907
  verification of vortex Rossby waves in spiral bands of a simulated hurricane, 2128
Tropical storm activity, impact of sea surface temperature anomalies, 3477
Tropical tropopause, model for convective and advective transport across the tropical tropopause, 765
Tropical vortices, minimal 3D tropical cyclone model, 1924
Tropical waves, models for stratiform instability and convectively coupled waves, 1567
Tropopause, cyclone–anticyclone asymmetry, height of the thermal and dynamical, 26
Tropopause disturbances, balances asymmetries of waves on the tropopause, 237
Tropopause interchange, transport in the low-latitude tropopause zone from particle trajectories, 173
Troposphere
  equilibration of short Charney waves, homogenization in the extratropical, 3443
  properties of turbulence, meridional mixing along isentropic surface in, 2377
  results of troposphere–stratosphere configuration of a unified model, 2000
Troposphere inhomogeneity, sensitivity of midlatitude troposphere equilibrium to radiative forcing, 2395
Troposphere–mesosphere model, kinetic energy spectrum and budget in a troposphere–stratosphere–mesosphere model, 329
Tropospheric–stratospheric flow, modification of drag caused by partial reflections of gravity waves, 797
Truncation errors, design, efficiency and accuracy of a nonhydrostatic global model, 349
Turbulence
  effects of turbulence on scavenging of aerosol particles by drops, 3064
  new third-order moments for the CBL, 1169
  theory for forcing and dissipation in stochastic turbulence models, 3762
Turbulence measurements, critical test of Monin–Obukhov similarity theory for convective conditions, 1549
Turbulent dispersion, turbulence, meridional mixing along isentropic surface in troposphere, 2377
Turbulent exchange, time and space variability of the early evening surface layer transition, 2650

Turbulent kinetic energy, storms, viscous dissipation of, 3793
Two-day wave, seasonal amplification of the 2-day wave: normal mode and instability, 1858
Ultragiant aerosol, early radar echoes in a cumulus congestus, modeling and observations, 3545
Unbalanced fronts, zero potential vorticity with unbalanced frontogenesis, 2180
Updraft statistics, updraft and downdraft statistics in simulated cumulus convection, 1630
Upper air, aircraft, radiosonde, and radar observation in cirrus clouds, 451
Upper-troposphere vorticity, upper-troposphere potential vorticity fluctuations and the annual mean, 1815
Upper-tropospheric disturbance, eddy shedding from the upper-tropospheric Asian monsoon anticyclone, 93
UV measurements, effect of aerosols during the SUSPEN campaign, 1529
Variability
  friction torque dynamics associated with intraseasonal length-of-day, 2942
  seasonal intraseasonal variability of large-scale barotropic modes, 50
Variation, quasi-biennial and subbiennnial variation of stratospheric constituents, 7
Variational analysis, kinematics and dynamics of a shallow hailstorm sampled by Doppler radars, 1222
Velocity retrieval, application of the Zhang–Gal-Chen retrieval in deep convection, 998
Venus
  cloud microphysics, 3597
  global circulation, 3597
  Hadley circulation, 3597
Venus clouds, blocky markings and planetary-scale waves in the equatorial Venus clouds, 365
Vertical coupling, effects convective heating on movement and, tropical cyclones, 3639
Vertical heat flux, observations and modeling of transition of coastal stratus into fog, 1714
Vertical mixing, long-term observations of the dynamics of the continental boundary layer, 1288
Vertical motion, diurnal variation of the marine boundary layer during ASTEX, 2355
Vertical temperature profile, multiscale variability of the mixed layer over the western Pacific warm pool, 2729
Vertical wave propagation, origin of the subtropical anticyclones of the summer season, 1827
Vertical wind shear, role of cold pools in organization of tropical convection in low wind shear, 1650
VHF radars, bias in mean vertical wind measurements, 707
Viscous dissipation, of turbulence kinetic energy in storms, 3793
Vortex
  Arctic stratosphere, 3581
  effect of peripheral convection on tropical cyclone formation, 3463
Vortex decay, axisymmetric spindown dynamics for hurricane-like vortices, 421
Vortex dynamics, uses and limitations of contour advection for examining Arctic vortices, 2210
Vortex motion, topographical effects on barotropic vortex motion with no mean flow, 1310
Vortex vertical alignment, alignment and corotation of weak tropical vortices via linear Rossby waves, 2306
Vortices
  oscillatory instabilities to zonally varying barotropic flows, 3135
  wavenumber 1 instability and trochoidal motion of hurricane-like, 3243
Vorticity anomaly, topographical effects on barotropic vortex motion with no mean flow, 1310
Vorticity mixing, distinct regimes in kinematic and thermodynamic structure of hurricane eyes, 1079
Walker circulation, seasonal prediction capability by monitoring Walker circulation at equator, 2146
Warm core eddy, tropical cyclone intensity change from a simple ocean–atmosphere model, 154
Waterspout, thermodynamic theory for dust devils applies to waterspouts, 927
Water vapor
  role in organization of tropical convection in low wind shear, 529
  vapor gradient and condensed water effects–stability criterion, 2013
Waves
  back-sheared flow model over an isolated hill in the presence of rotation, 3293
  equilibration in an eddy-resolving model with simplified physics, 561
  excitation of the 10- and 16-day waves, 1129
  instability of neutral Eady waves and orography, 1146
  interaction of extratropical stationary waves and zonal mean circulation, 462
  meridional localization of planetary waves in stochastic zonal flows, 808
  Rossby waves in zonally opposing mean flow: behavior in NW Pacific monsoon, 1035
  ultrasimple spectral parameterization for nonorographic gravity waves, 1837
Wave activity flux, examination of baroclinic wave structure using reanalysis data, 1694
Wave breaking
  characteristics of gravity waves and responses to general body forces, 2249
  diagnosing the impact of planetary wave breaking in a linear model, 1357
  diagnostic technique to derive dynamical/chemical tracer fields, 2441
Wave development, models for stratiform instability and convectively coupled waves, 1567
Wave drag
  analysis of zonal momentum budget in light of its average kinematics, 3328
  dynamics of tropical upwelling branch of stratosphere Brewer–Dobson circulation, 3097
  effect of wave-driven circulation and wave drag on Hadley circulation, 3077
Wave-driven circulation, dynamics of tropical upwelling branch of stratospheric. Brewer–Dobson circulation, 3097
Wave dynamics, diagnostic technique to derive dynamical/chemical tracer fields, 2441
Wave interactions, planetary-scale preconditioning for the onset of blocking, 933
Wave–mean interaction
  internal variability of the troposphere–stratosphere coupled system, 3184
  periodic orbits and disturbance growth for baroclinic waves, 436
  saturation of topographically forced Rossby waves in a barotropic model, 2927
  seasonal amplification of the 2-day wave: normal mode and instability, 1858
  stochastic modeling of the MJO, dynamics, and tropical cyclone formation, 2559
Wavenumber spectra, characteristics of complete discrete wavelet analyses of simulated convection, 850
Wave packets, examination of baroclinic wave structure using reanalysis data, 1694
Wave propagation
  blocky markings and planetary-scale waves in the equatorial Venus clouds, 365

saturation of topographically forced Rossby waves in a barotropic model, 2927
wave propagation characteristics affect on vertical structure of planetary waves, 2872
Wave solutions, balances asymmetries of waves on the tropopause, 237
Wave–wave interaction, nonlinear motions of a barotropic vortex in still air and in zonal flow, 1907
Weak oscillators, linear stability of modons on a sphere, 2280
Weak temperature approximation, the weak temperature gradient approximation and tropical waves, 3650
Weather observations, idealized adaptive observations for improving numerical weather predictions, 210
West African rainfall, impact of sea surface temperature anomalies, 3477
Westerly jet stream, effects of convective-induced gravity waves on the general circulation, 302
Westerly wind burst
budget estimates of convective momentum transport over the tropical Pacific, 1673
multiscale variability of the mixed layer over the western Pacific warm pool, 2729
Western Pacific convection, sensitivity of tropical Pacific clouds and precipitation to SST change, 253
Western Pacific warm pool, multiscale variability of the mixed layer over the western Pacific warm pool, 2729
Westward propagation, eddy shedding from the upper- tropospheric Asian monsoon anticyclone, 93
Wind measurement, bias in mean measured by VHF radars, 707
Wind profiles, similarity equations for wind and temperature profiles in the lower BL, 1446
Wind shear
decomposition of structures in wavelet analyses of tropical convection, 868
effect of vertical wind shear on radiative–convective equilibrium states, 1427
effects on evolving convective boundary layer, 546
implications of cumulus ensembles in wind shear for parameterization, 2832
Wind stress curl fields, global distribution of time-averaged wing stress curl from NASCAT, 109
Wind tunnel
effects of turbulence on scavenging of aerosol particles by drops, 3064
turbulence structure in a horizontally developing sheared CBL, 70
Wintertime stratosphere, isentropic modeling of winter 1979 stratosphere warming and recovery, 2630
Zonal flow, meridional localization of planetary waves in stochastic flows, 808
Zonal forcing, characteristics of gravity waves and responses to general body forces, 2249